



**GOVERNMENT OF BERMUDA**  
Ministry of Energy, Telecommunications and E-Commerce  
The Department of Telecommunications

# **Spectrum**

Supplemental Consultation Document

**Ministry of Energy, Telecommunications  
& E-Commerce**

25<sup>th</sup> August 2009

**Closing Date for Responses 8<sup>th</sup> September 2009**

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## **I. EXECUTIVE SUMMARY**

1. June 1, 2009 the Ministry of Energy, Telecommunications, and E-Commerce (METEC) released its Spectrum Consultation, responses to which were received on July 13, 2009.
2. On July 14, 2009 METEC sent out to the parties a document depicting current spectrum assignments in Bermuda. The primary purpose of this supplementary consultation is to seek out from the parties their responses to this additional information. In particular, METEC is requesting parties to revisit their initial responses of July 13<sup>th</sup> and to provide METEC with any changes and/or elaborations parties may wish to make to those responses in light of the spectrum allocation information they have recently received.
3. In addition, this supplementary consultation seeks to gain from the parties a more informed understanding as to how the concerns regarding tower congestion and the moratorium on tower construction may best be addressed.

## **II. Consultation Procedure**

This consultation is being run in accordance with the Consultation Process documented in METEC's publication of the same name dated 28 November 2008 (available on METEC's web portal<sup>1</sup>).

The consultation period will run from August 25, 2009 to September 8, 2009. Written comments should be submitted before 4 PM on September 8, 2009.

Please submit your responses in MS Word or Adobe Acrobat format by email to [gtelecom@gov.bm](mailto:gtelecom@gov.bm) and a hard copy delivered by hand to:

Hiram Edwards  
Acting Director of Telecommunications  
Department of Telecommunications  
F.B Perry Building  
2<sup>nd</sup> Floor  
40 Church Street

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<sup>1</sup> <http://www.mtec.bm/portal/server.pt?>

Hamilton HM 12  
Bermuda

All comments should be clearly marked “Comments on Supplemental Spectrum Consultation—August 25, 2009”.

The Minister intends to make responses to this consultation available on the Government of Bermuda website. Any material that a respondent considers to be commercially sensitive should be put into an Annex and clearly marked “IN COMMERCIAL CONFIDENCE. Further details on the submission of confidential information are provided in the Consultation Process document available on the web portal.

The Minister regrets that he is not in a position to respond individually to the responses to this consultation.

*This document does not constitute legal, technical or commercial advice; the Minister is not bound by this document and may amend it from time to time. This document is without prejudice to the legal position or the rights and duties of the Minister to regulate the market generally.*

### III. SPECTRUM REGULATION

#### A. *The Status Quo*

##### 1. Legal and Policy Framework

4. Part V of the Telecommunications Act 1986 (as amended)<sup>2</sup> addresses generally, special provisions regarding radio, and specifically, Section 33 states that:

(1) The Minister shall, in accordance with the Convention, determine the bands of frequencies or the individual frequencies which may be used by radio or other apparatus to which this Act applies and may determine the bandwidth, type of emission, power and call sign which shall be used.

(2) The assignment of a frequency or frequencies to any radio apparatus or radio station does not confer a monopoly of the use of such frequency or frequencies nor shall a licence or permit be construed as conferring any right of continued tenure in respect of any frequency or frequencies.

5. Notably, according to Section 2 of the Act:

“Convention” means the International Telecommunication Convention currently in force which is applicable to Bermuda or to which Bermuda is a party, and includes any modifications thereof, or any agreements or regulations made under it from time to time which are applicable to Bermuda or to which Bermuda is a party;

6. Section 6 of the Act charges the Department of Telecommunications (DoT) with the “...duty of assisting the Minister in the discharge of his functions under this Act and to fulfil any duties assigned to it under this Act or the regulations.” Under this provision of the Act the Minister has delegated to the DoT certain responsibilities for managing Bermuda’s spectrum resources, as enumerated in a letter from Mr. Charles T. Collis, Minister of Legislative Affairs, to the Department of Telecommunications.<sup>3</sup>

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<sup>2</sup> Telecommunications Act 1986 (Hereinafter: the “Act”)

<sup>3</sup> Mr, Charles T. Collis, Minister of Legislative Affairs, to the Department of Telecommunications, February 20, 1987.

7. Like many jurisdictions, the DoT has historically utilized a first-come-first-served (FCFS) approach to spectrum regulation whereby administrative decisions made by the DoT, as opposed to market mechanisms such as auctions, are relied upon to determine spectrum assignments and usage. For example, the DoT has generally allocated spectrum on a FCFS basis to parties who have submitted requests to the Minister which have included:

- A demonstrated need for the spectrum requested;
- A band and band plan<sup>4</sup> (bandwidth requirement) of the requested spectrum;
- The technology to be used;
- A demonstration of efficient use of spectrum; and
- The timely deployment and use of spectrum.

The spectrum allocations issued by METEC are documented by the DoT and stored in a centralized database. This database includes the spectrum allocations assigned on a commercial basis by Telecommunications, and Broadcasting licensees, and the frequencies assigned to the Government, individuals or organizations for private use.

8. It is also the purview of the DoT to manage Radio Frequency (RF) emissions and testing. Currently, the DoT adheres to the testing guidelines provided by: OET BULLETIN 65, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*. (Edition 97-1. August 1997, the Guidelines).

#### **IV. PURPOSE OF THIS CONSULTATION**

9. The purpose of this supplementary consultation is to afford parties an opportunity to review their responses to the initial *Spectrum Consultation Document* in light of the *Spectrum Assignments for Licensed Carriers* documentation recently issued by METEC.

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<sup>4</sup> A band is a particular set or frequencies (example: GSM 1900 band is from 1930 – 1990 MHz), however the band plan is how the band is broken down even further. In this example, the band plan is for 1930 - 1990 (60 MHz wide) to be broken down into six distinct smaller bands of 5 or 15 MHz wide.

10. METEC chose this course of action because:

1. It believes that responses from the parties concerning the current state of spectrum allocations in the country and how these assignments may either advance or hinder the spectrum management and allocation objectives articulated in the *Spectrum Consultation Document*<sup>5</sup> would be extremely useful; and,
  2. METEC's review of responses to the initial consultation document indicated that the document contained a number of questions the responses to which, according to certain parties, would have been better informed had the parties had access to the spectrum assignment documentation at the time of their response.
  3. METEC's review of responses to the initial consultation document has shown that a major concern of parties regarding spectrum management is the moratorium on tower construction and the attendant problem of tower congestion that may have arisen as a result of this moratorium.
11. In particular, METEC believes that an update of the parties responses to the following questions from the previous consultation, in light of the current spectrum assignments documentation they have received, would be useful:

**QUESTION 7. Are there any policies currently hindering the efficient use of spectrum in Bermuda? Please provide a detailed response along with support for your position.**

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<sup>5</sup> Recall that these objectives, as stated at ¶14 of that document, are:

- facilitating the allocative efficient use of radio spectrum for the purposes of attaining maximum benefit for the community;
- achieving technical, productive, and dynamic efficient use of radio spectrum to facilitate the introduction of advanced and innovative communications services which will strengthen Bermuda's position in the global marketplace;
- fulfilling Bermuda's regional and international obligations relating to the use of spectrum; and
- ensuring that necessary spectrum is reserved for essential public services.

- QUESTION 8.** Are there any policies that could be implemented to support more efficient use of spectrum in Bermuda? Please provide a detailed response along with support for your position.
- QUESTION 9.** Is the efficient use of spectrum, or lack thereof, a cause for concern in Bermuda? Please provide a detailed response along with support for your position.
- QUESTION 10.** How flexible have spectrum holders in Bermuda been in adapting spectrum access and usage to technological innovations and/or the demand for wireless services? Please provide a detailed response along with support for your position.
- QUESTION 11.** What standard, WiMAX or LTE, do you anticipate will become the dominant wireless technology in Bermuda within the next 3 to 6 years? Please provide a detailed response along with support for your position.
- QUESTION 15.** Would a process like that recommended for the UK, discussed at ¶37, be appropriated for meeting the Government of Bermuda's spectrum needs, or do parties believe that an alternative methodology is required? Please provide detailed support for your response.
- QUESTION 17.** We have discussed three allocation methods: beauty contest, lottery, and auctions. Does the respondent concur that auctions are the most efficient mechanism for allocating scarce spectrum in Bermuda? Please explain, and include in the response a full description of any alternative allocation mechanism(s) that the respondent feels will result in a more sensible, or efficient, allocation of spectrum.
- QUESTION 19.** Should the Government place limits on the amount of new spectrum that can be obtained by current spectrum holders? Please provide a detailed response along with support for your position.
- QUESTION 20.** Should the Government place limits on the total amount of spectrum that any firm can be allocated? Please provide a detailed response along with support for your position.
- QUESTION 21.** Should current holders of spectrum be allowed to participate in the process of seeking additional spectrum, or should the process be limited to firms that have not been assigned spectrum? Please provide a detailed response along with support for your position.
- QUESTION 22.** Should the Government only allow current holders of spectrum to participate if they can make a showing that they would like to acquire new spectrum in order to provide new services, rather than to exclude potential rivals? If so, what information should be reviewed in order to discern if the spectrum application is needed in order to serve the expanding market demand for the company's products, as

opposed to exclusion of rivals? Please provide a detailed response along with support for your position.

**QUESTION 32.** Should the Government concentrate on allocating unassigned spectrum and not modify current spectrum assignments? If so, please explain why you believe there is no need to recover any previously allocated spectrum. If not, please explain why you believe there is a need for the Government to pursue reclamation of unused or underutilized spectrum.

**QUESTION 36.** We ask the parties to provide suggestions regarding which spectrum should be made available today, versus spectrum that could be warehoused for future release. We would like to hear not only which spectrum should be made available, but also suggestions as to what methodology or policy could be adopted to determine when it would be most optimal to release additional spectrum in the future. Please provide a detailed response along with support for your position.

**QUESTION 37.** Is the STU holding fee approach just discussed applicable to the situation of spectrum frequency usage in Bermuda? Please provide supporting analysis for your position.

b) If you believe that the above approach is applicable to Bermuda, please comment on how STU holding fee for cellular frequencies, derived from the current handset fee, ought to be adjusted to account for the increased value of the spectrum that is being utilized by those handsets. Please provide supporting analysis for your response.

**QUESTION 38.** In the event that Table 1 does not contain a complete list of spectrum bands and associated AIP prices, how do parties feel about utilizing interpolation for developing ratios for spectrum bands not in the table, but for which AIP may be appropriate? Please provide supporting analysis for your response.

**QUESTION 47.** Please comment on the tentative conclusion reached at ¶157 to utilize a per carrier spectrum block assignment of 2 x 8.6 MHz for the 800/900 MHz spectrum band and 2 x 11.6 MHz block assignment for the GSM 1800 MHz band in developing the proposed AIP per unit of cellular spectrum, the STU mentioned in ¶119, to be employed in Bermuda. Please explain your response.

12. Parties are, of course, free to elaborate upon any of their other responses as a result of the information contained in the spectrum assignment table, should they feel the need to do so.

13. As intimated at ¶3, above, a common thread that ran through the responses of the parties to the initial consultation was the opinion that the current moratorium on new towers along with the perceived lack of space on existing towers presents a significant barrier to potential new entrants as well as to the roll out of more advanced services by existing providers.
14. Comments on the issue of tower congestion were contradictory and somewhat confusing. On the one hand some parties asserted that existing towers are either completely saturated, or almost so. While on the other hand some parties argued for government mandated tower sharing on existing towers, with one party going further and arguing that the number of tower sites in Bermuda could actually be reduced through mandated tower sharing. The nature of these comments raises the question of just how congested are the existing towers in the country.
15. Accordingly, METEC seeks additional data from the parties concerning the actual state of congestion on existing towers. Parties asserting that existing towers are either completely congested, or nearly so, are asked to provide data supporting these assertions. Parties asserting that the government ought to mandate tower sharing on existing towers are asked to provide data in support of the implication that existing towers currently have enough capacity to make mandated tower sharing a worthwhile endeavour.
16. Concerning the moratorium on the erection of new towers, parties arguing that the construction of new towers are necessary for the roll out of new services and the growth of the industry are requested to provide METEC with data supporting these assertions. Advocates for new towers are also requested to provide METEC with detailed proposals as to how the number of potential new towers may be kept to a minimum along with suggestions as to how new towers may be sited so as to have minimal impact on the neighbourhoods in which they may be located.

**Question 48: Please provide additional data concerning the actual state of congestion on existing towers.**

17. Parties are also encouraged at this time to submit any other comments or recommendations they believe would assist in the formulation of sensible spectrum management and assignment recommendations for the Regulatory Authority's (RA) consideration.