

**BY EMAIL:** [dg@ptd.gov.mm](mailto:dg@ptd.gov.mm)

To

Director General  
Posts and Telecommunications Department  
Ministry of Transport and Communications  
Nay Pyi Taw  
The Republic Union of Myanmar

Our date

November 14, 2020

Your date

Our reference

TML/CA/REG/408

Your reference

Our contact

Aung Tharn Daing  
09791001471

[aungtharn.daing@telenor.com.mm](mailto:aungtharn.daing@telenor.com.mm)

Cc

Deputy Director General  
Posts and Telecommunications Department

**Subject: Providing comments and recommendations on the Microwave frequency utilisation charges and charge structure for link-by-link regime proposed by PTD**

**Reference:** PTD ref. 700 – SaNya/Kwe(7)Resource/7803 dated October 8, 2020

Dear Sir,

Telenor Myanmar (TML) would like to applaud PTD for its consultative approach in proposing a link by link regime for the utilisation of Microwave Frequencies in Myanmar with reference to PTD's letter above.

We note that PTD's rationale for moving to a link-by-link regime is to improve the rate and efficiency of microwave spectrum utilisation by eradicating frequency interference between users with the implementation of the Automated Spectrum Management System. This is commendable and we support the continued modernisation and automation of PTD's spectrum management systems.

In this spirit, we note that the proposed link-by-link regime should not create or raise barriers for mobile operators to access and use microwave spectrum. In fact, accessibility of microwave spectrum should be improved with the implementation of Automated Spectrum Management System given the greater efficiencies in spectrum management that it allows.

This is especially important given the importance of microwave spectrum for the delivery of mobile services as fibre is not a practice alternative.<sup>1</sup> In this regard, we respectfully note that the charge structure and charge level in the new link-by-link regime does not support nor encourage efficient user of microwave spectrum to deliver services to end users. Below we provide our comments on the proposed changes utilization charges for PTD's kind consideration.

#### **1) Proposed utilisation charges high relative to other jurisdictions**

The utilisation charges and charge structure proposed by PTD will result in very high charges for mobile operators who utilise sizable bandwidths and deploy more links in order to provide mobile services nationwide.

ABI Research for GSMA has studied backhaul spectrum in 32 countries – fees for the lowest, median and highest priced markets are summarised in the table below. The proposed utilisation charges for link-by-link utilisation in Myanmar will on average<sup>2</sup>, result in spectrum fees that far exceed even the highest international benchmarks by several fold.

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<sup>1</sup> This was noted in our previous letter dated 14th Aug 2020 (Ref TML/CA/REG/283).

<sup>2</sup> Average across relevant bands calculated using TML's existing utilisation of microwave spectrum.

Table 1: International benchmarks of microwave spectrum fees

	Country	Low (US\$/MHz per year)	Country	Mid (US\$/MHz per year)	Country	High (US\$/MHz/ Year)	Myanmar based on TML MW usage (US\$/MHz per year)*
<b>Sub5GHz</b>	Spain	\$17	Italy	\$45	Pakistan	\$1468	NA
<b>6-13GHz</b>	Spain	\$15	Nigeria	\$42	Bangladesh	\$630	\$3884
<b>14-25GHz</b>	Spain	\$10	Italy	\$33	Bangladesh	\$376	\$2994
<b>26-56GHz</b>	Spain	\$5	Jordan	\$32	Bangladesh	\$313	NA
<b>E-band (71- 88GHz)</b>	Japan	\$0.02	France	\$3	United Kingdom	\$71	NA

Source: ABI Research for GSMA, 2020, Wireless Backhaul Path To Evolution

\*1 Kyat = US\$0.00076

By way of illustration, the proposed rate of 70,000 Kyat per MHz will mean that utilising a 14MHz channel in the 6GHz band will cost US\$745 per link. This per link fee already exceeds the price per MHz of the highest priced country (Bangladesh) in ABI Research's study. This means that operators in Myanmar will have to pay several times more than operators in other jurisdictions with the difference in cost increasing in the channel width and number of links used by operators in Myanmar.

## 2) Proposed charges will result in a significant and disproportionate increase in microwave spectrum fees for TML

The proposed switch to a link-by-link regime should not result in a substantive increase costs for existing users including mobile operators – this is important to ensure that the new regime does not disrupt provision of mobile services in Myanmar. Further, it is in-line with international best practice for regulators to give due regard on the impact on existing operations when revising licensing regimes and spectrum fees. Typically, a regulator should consider economic and market conditions, in determining whether any increase in fees is acceptable and justified.

For instance, in Pakistan where the Pakistan Telecommunications Authority is currently considering an alternative charge mechanism for microwave spectrum fees – it notes that the change should not increase overall spectrum costs faced by operators. In the UK in 2004, Ofcom looked at the financial impact on operators of a proposed increase in fixed link fees, carefully evaluated whether a 25% increase in fixed link fees over a period of 5-years was reasonable and noted that a phased implementation of any significant increase in fees would be appropriate.<sup>3</sup>

PTD's proposed utilisation charges applied to the 18GHz and 23GHz bands only will result a 21x increase in fees for TML over current levels. If the new charges are eventually applied across all microwave spectrum bands, this will result in a 10x increase fees for TML. Ooredoo and MPT will likely face an increase in fees as well. This will create additional financial burden on operators in what is already a highly competitive market environment. Increase in fees may have potential knock on impact on end users in the form of higher prices and/or on reduced or delayed future investments.

## 3) Fee should be set to recover PTD's administrative costs of managing microwave spectrum

We note that for most of the microwave bands, there is ample supply for spectrum and no excess demand. In line with international best practice, utilisation charges for these bands should be set to recover PTD's cost of managing and administering spectrum in these bands. In addition, regular audits on costs should be carried out to ensure

<sup>3</sup>Ofcom, 2004, Spectrum Pricing Statement.

prudence and good accounting practices. The results of the audits should be made public for transparency and accountability.

We expect that the cost recovery approach should yield a spectrum charge that is broadly in-line with international benchmarks.

#### **4) Charge structure should encourage network deployment and efficient use of spectrum**

In line with the aim to increase efficiency of use of microwave spectrum – the proposed charge structure should encourage improving coverage, spectrum reuse and improving spectral efficiency with the use of more advanced backhaul technologies. Pricing per MHz means that costs to mobile operators increase with wider channels. While this is the case under the current charge structure as well, the new charge structure will compound this effect as the per link price is defined on a per MHz basis.

This will not be conducive to 5G deployment going forward. 5G backhaul will require wider channel sizes that are available in higher frequency bands. High backhaul spectrum fees will have a significant impact on the total cost of networks in the 5G era. To lay the foundations for 5G in the future, PTD should put in place a future-ready framework for microwave spectrum that encourages mobile deployment and operators to improve spectral efficiency.

Further, high microwave spectrum prices will present a barrier to network evolution and improved coverage. Specifically, a per link regime will see deployment costs increase linearly with the number of links used. As noted previously, the current per block pricing will better encourage scalable extension of microwave networks for better network coverage. Sub-leasing models that would support usage of microwave spectrum by other potential users, including locally alongside wide area assignments to mobile operators can be considered to encourage more efficient use of spectrum. We welcome a discussion with PTD over possible options to consider in this regard.

In summary, we urge PTD to:

- 1) Revise the utilisation charge to more moderate levels:
  - at a level sufficient to cover PTD's cost of administering the spectrum;
  - is within the low to mid fee range of international benchmarks – we would propose that PTD considers reducing its proposed per link charge and minimum charge by 100-250 times (see Table 2 and Table 3 below) to bring microwave spectrum charges in Myanmar in-line with international benchmarks;
  - minimally the proposed charges should not result in an increase in spectrum fees incurred by mobile operators – this means reducing the proposed per link charge and minimum charge by at least 10 times (see Table 4 below)
- 2) Revise the charge structure/formula to:
  - encourage network deployment and improvements
  - account for spectral efficient methods of use of spectrum
  - mitigate the escalation of prices for larger bandwidths

We stand ready to discuss a suitable licensing regime, charge structure and level with PTD alongside rest of industry.

*Table 2: Reducing proposed charges by 250x*

	Per link fee (Kyat)	Minimum charge (Kyat)	Spectrum cost (Kyat) per MHz per year based on TML's holdings	GSMA International benchmarks low fee levels
<=10GHz	280	480	16	15
10-15GHz	240			
>15GHz	200		12	10

*Table 3: Reducing proposed charges by 100x*

	Per link fee (Kyat)	Minimum charge (Kyat)	Spectrum cost (Kyat) per MHz per year based on TML's holdings	GSMA International benchmarks median fee levels
<=10GHz	700	1200	39	42
10-15GHz	600			
>-15GHz	500		30	33

*Table 4: Reducing proposed charges by 10x*

	Per link fee (Kyat)	Minimum charge (Kyat)	Spectrum cost (Kyat) per MHz per year based on TML's holdings	GSMA International benchmarks high fee levels
<=10GHz	7000	12000	388	630
10-15GHz	6000			
>-15GHz	5000		299	376

Should you have any further information, please do not hesitate to contact us.




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Mya Thwin, SVP, Head of Regulatory,  
 Signing on behalf of Jon Omund Revhaug,  
 Chief Executive Officer, Telenor Myanmar Limited