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Subject: The GSMA's response to TRAI Supplementary Consultation Paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed

Dear Sir,

Please find attached the GSMA's responses to Questions 8 & 9 of the Supplementary Consultation Paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed issued on May 19, 2021.

These questions pertain to the issue of installation of small cells and access to street furniture.

Small cells are viewed as a significant driver for the growth of 5G networks and digital revolution. Their ease in deployment and cost-effectiveness gives them a greater advantage over macro cells. The main challenges in deployment of small cells in India are with regards to access to rights of way, electrical power and backhaul. This underscores a greater need today for a uniform policy on deployment of small cells which addresses these challenges.

Mobile network operators need enabling policies that provide easier access that is permit free and low cost. A framework needs to be developed in order to identify the best sites for small cells, expedite the approval process for their use, and keep deployment costs in check. Additionally, ease in power supply and policy changes that facilitate the rollout of backhaul technologies and reduce costs can help significantly.

In our response, we discuss these challenges as well as offer recommendations for the way forward with reference to some global best practices.

The GSMA would like to thank the Telecom Regulatory Authority of India for giving us the opportunity to discuss several important issues of relevance in this regard. We look forward to similar discussions in the future.

Yours sincerely,

A handwritten signature in black ink that reads "Jeanette Whyte". The signature is written in a cursive, flowing style.

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TRAI Supplementary Consultation Paper on Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed

GSMA Response to Qs 8 & 9:

Q. 8: What are key issues and challenges in getting access to public places and street furniture for installation of small cells? Kindly provide the State/ City wise details.

Globally, in next few years, we expect 5G to bring in a significant change in the connectivity landscape. The pandemic has only highlighted the need for a reliable and resilient connectivity for all sectors of the economy. For India, 5G can play a vital role for the economy, with benefits of at least \$455 billion in the next two decades. GSMA forecasts 88 million 5G connections by 2025.¹ There is great potential for growth here, however, poorly designed policies may put that at risk.

'Small cells' is an umbrella term for operator-controlled, low-powered radio communications equipment (base stations) that provide mobile and internet services within localised areas. Small cells typically have a range from ten metres to several hundred metres.² The term 'small cells' covers femtocells, picocells, microcells and metrocells that are used in residential (Home Base Station (BS)), enterprise (Local Area BS), urban and rural environments (Medium Range BS). Small cell deployments that are interconnected are also termed distributed antenna systems (DAS) or inbuilding systems (IBS) where they provide service within an existing structure. Local Areas BS are typically deployed in indoor environments accessible to the general public such as stations, airports, commercial centres. Medium range BS are typically deployed in outdoor environments. They are often embedded in street furniture such as lighting fixtures, advertisement panels, bus shelters or street signs.³ Street furniture is a term used to define objects in public spaces that house small-cell units in boxes and are considered visually commonplace to the public.⁴

Many studies have forecast a huge increase in the global 5G small cell market size over the next 5-6 years. According to a report by the Small Cell Forum, small cells for 5G

¹ The Impact of mmWave 5G in India, GSMA, October 20, 2020. Available here:

<https://www.gsma.com/spectrum/wp-content/uploads/2020/11/mmWave-5G-in-India.pdf>

² Improving Wireless Connectivity through Small Cell Deployment, GSMA Booklet, 2016. Available here:

https://www.gsma.com/publicpolicy/wp-content/uploads/2016/12/GSMA_Small_Cell_Deployment_Booklet.pdf

³ Ibid.

⁴ The Role of Street Furniture in Expanding Mobile Broadband, Wireless Infrastructure Association, Available here: <https://wia.org/wp-content/uploads/The-Role-of-Street-Furniture-in-Expanding-Mobile-Broadband-.pdf>

networks are going to witness a CAGR of 80 per cent between 2019 and 2025.⁵ Enterprise is poised to account for 68% of small cells deployed by 2026.⁶

Small cells are viewed as a significant driver for the growth of 5G networks and digital revolution. Their ease in deployment and cost-effectiveness gives them a greater advantage over macro cells. Additionally, small cells can sometimes be a good solution when radio signal penetration is difficult. They can also be deployed to extend the mobile network coverage and capacity on a localized area.

Non-availability of faster permissions and high charges are a major hindrance in faster rollout of micro cells/small cells which are required for deeper penetration of network. Additionally, backhaul will be supporting 5G base stations, which have a challenging task to meet different types of expected performance. Need for spectrum to light up small cells is important. Both, access to spectrum and ease of installing small cells are crucial steps towards building resilient connectivity.

In light of the above, there is a greater need today for a uniform policy on deployment of small cells.

Challenges in deployment of small cells technology

There are three main challenges to the deployment of small cells globally as well as in India, namely, (1) access to rights of way (2) electrical power and (3) backhaul.

Significant challenges with regards to access are as follows:

- Identification of new locations for deployment
- Acquiring permits for these locations
- Bearing operational costs to lease, deploy and maintain these sites
- Being subject to the same requirements as that for macro cell towers in processing of permits
- Conventional processes adopted for review of applications for small cells
- Different laws adopted by states and local bodies
- Permissions needed for power supply and generator sets under state electricity laws
- Lack of adequate spectrum, particularly for backhaul

As discussed earlier, small cells are a key strategic enabler for 5G. However, for reasons mentioned above, there are quite a few challenges in its roll out. To facilitate this, mobile network operators need enabling policies that provide easier access that is permit free, and low cost. A framework needs to be developed in order to identify the best sites for small cells, expedite the approval process for their use, and keep deployment costs in

⁵Small Cell Surge, July 2019. Available here: <https://tele.net.in/small-cell-surge/>

⁶ SCF: 68% of small cells will be enterprise by 2026, July 10, 2020. Available here:

<https://www.fiercewireless.com/wireless/scf-68-deployed-small-cells-will-be-enterprise-by-2026>

check. Additionally, ease in power supply and policy changes that facilitate the rollout of backhaul technologies and reduce costs can help significantly.

In the subsequent section, the GSMA lists some best practices from across the globe and proposes some recommendations as a way forward.

Q.9 How to permit use of public places and street furniture for the effective rollout of 5G networks? Kindly suggest a uniform, simple, and efficient process which can be used by States/ Local-Bodies for granting access to public places and street furniture for installing small cells. Kindly justify your comments.

In India, the Right of Way Rules of 2016 do not expressly address the issue of accessibility to street furniture and should be updated to facilitate deployment of small cells. A targeted and uniform policy on small cell deployment could have significant benefits as well.

The GSMA would also like to bring attention to some of the international best practices that have been adopted by governments in various countries. These government initiatives can be summarized as:

- Creating categorical exemptions for simplification in grant of permissions
 - Providing access to sites and government premises
 - Reducing costs for access to premises
1. Many countries have adopted criteria for exemption that can be used for deployment of new antennas. For instance, the height of the installed antenna and the Effective Isotropic Radiation Power (EIRP) metric are being used as criteria for certification exemption or process simplification. The International Electrotechnical Commission (IEC) has developed detailed classes of small cell products and installations, which are also reflected in ITU recommendations. Where small cell installations comply with the power and installation parameters provided therein they should be deemed to comply with the exposure limits without further requirements.⁷

2. United Kingdom

The UK government in 2020 proposed some changes to the law in the interest of speeding up 5G roll out. These reforms are as follows⁸:

- 2.1 Mobile providers can put more equipment on masts, making it possible to share mobile masts and boost 5G coverage.
- 2.2 Building-based masts can be placed closer to highways to support coverage of road networks.
- 2.3 Cabinets containing radio equipment to be deployed alongside masts.

⁷Supra note, 2.

⁸Government makes law changes to speed up 5G rollout, July 23, 2020. Available here: <https://5g.co.uk/news/government-law-changes-speed-5g-rollout/5364/>

3. EU

In 2020, the EU has adopted regulations to accelerate 5G network installations by simplifying the deployment of small cell antennas that provide the last mile for 5G networks. The Regulation provides for the following:

- 3.1 Specifies the physical and technical characteristics of small cells for 5G networks.
- 3.2 Aims to help simplify and accelerate 5G network installations, which should be facilitated through a permit-exempt deployment regime, while ensuring that national authorities keep oversight.
- 3.3 Lays out the specifications for a coherent and integrated installation, while providing national authorities with the means to oversee deployment of small cells.
- 3.4 Provides that small antennas should be exempted from any individual town planning permit or other individual prior permits. Permits may still be required for deployment on buildings or sites protected in accordance with national law or where necessary for public safety reasons.
- 3.5 Allows for broader national measures in support of straightforward small cell deployment.
- 3.6 Foresees future amendments to incorporate the latest technological advances.⁹

4. Japan

In Japan, operators can install 5G base stations on 208,000 traffic lights across the country.¹⁰ Moreover, the Japanese government has proposed that the costs of using the traffic lights for 5G deployments be shared between operators and local administrations.¹¹

5. Hong Kong

Hong Kong authorities have launched a pilot scheme¹² in March 2019 to make available selected government buildings and premises for installation of base stations for a nominal fee to MNOs. Under the scheme:

- 5.1 1000 Government premises have been made available for MNOs to install radio base stations with streamlined application processes and nominal rental (HK\$1 per year).¹³

⁹The Commission adopts Implementing Regulation to pave the way for high capacity 5G network infrastructure, EC Regulation. Available here: [https://digital-strategy.ec.europa.eu/en/news/commission-adopts-implementing-regulation-pave-way-high-capacity-5g-network-infrastructure?ID=a6g1r000000xQRvAAM&JobID=484319&%28European_Commission%29_ =](https://digital-strategy.ec.europa.eu/en/news/commission-adopts-implementing-regulation-pave-way-high-capacity-5g-network-infrastructure?ID=a6g1r000000xQRvAAM&JobID=484319&%28European_Commission%29_=)

¹⁰ Realising 5G's full potential: Setting policies for success, GSMA, March 2020. Available here: https://www.gsma.com/publicpolicy/wp-content/uploads/2020/03/Realising_5Gs_full_potential_setting_policies_for_success_MARCH20.pdf

¹¹ Ibid.

¹² Guidance Notes for Submission of Applications under the Pilot Scheme for Installation of Radio Base Stations at Selected Government Venues, March 2019. Available here: https://www.coms-auth.hk/filemanager/en/content_652/gn20190327e.pdf

¹³ Facilitating Measures for the Development of 5G, TRAAC Paper No. 6/2020, December 16 2020. Available here: https://www.ofca.gov.hk/filemanager/ofca/en/content_757/traac6_2020.pdf

5.2 Street furniture such as sheltered bus stops, public payphone kiosks and smart lampposts have been made available. MNOs were invited to conduct trials on these street furniture.

5.3 Guidelines have been issued to facilitate applications by MNOs for installation.¹⁴

6. Australia

Policymakers have been pro-active in building business confidence in 5G. The Australian Communications and Media Authority and the Department of Communications have put in place several policies to facilitate infrastructure deployment, including reductions in planning requirements for small-cell deployments in the public space, and the removal of barriers between license types to facilitate the re-allocation of incumbent spectrum holders.¹⁵

Summary of recommendations by the GSMA:

GSMA would like to take this opportunity to offer the following recommendations¹⁶ to facilitate deployment of small cells in India:

1. Adopting simplified and streamlined procedures for building/street furniture permits for small cells based on standardized size, installation requirements and radio characteristics.
2. Designing guidelines to facilitate the acquisition of new sites and greater transparency on available assets such as towers, buildings and other structures.
3. Granting easy access to existing street furniture such as traffic lights, bus stops, street lamps etc.
4. State electricity boards /distribution companies to ease permits for usage of their poles for deployment.
5. Exempting small cell installations from location registration requirements unless necessary for other reasons.
6. Implementing uniformity in grant of access to public spaces/ structures for installing small cells across state and the local bodies.
7. Updating the Right of Way Rules, 2016 to include deployment of small cells.
8. Reducing permit costs for small cells relative to those for macro cells.
9. EMF harmonization: Reliance on the national ICNIRP Standards for EMF radiation for small cell power when developing regulations on compliance with radiofrequency exposure limits.
10. Establishing norms related to the size and number of small cells deployed on any single street furniture infrastructure.

¹⁴ “Guidelines on the Use of Sheltered Bus Stops for the Installation of Radio Base Stations for Provision of Public Mobile Services”. Available here: <https://www.coms-auth.hk/filemanager/statement/en/upload/552/gn112020.pdf>,

¹⁵ 5G to deliver results in Asia–Pacific needs all stakeholders to collaborate, Analysys Mason, February 15 2019. Available here: <https://www.analysismason.com/research/content/white-papers/5g-collaboration-asia-pacific-rma18/>

¹⁶ Supra note, 2.

11. Facilitating access to electrical power. It is suggested that street furniture have a nearby power source for the wireless equipment to function.
12. Facilitating deployment of backhaul and at lower costs.¹⁷
13. Access to spectrum and provision of adequate spectrum bands for backhaul with wider channel sizes in millimeter wave (e.g. E-Band) to augment capacities and improve site planning.
14. Promoting stronger collaborations between industry and governments.¹⁸

¹⁷ In the UK, for example, regulators in 2018 granted “Relief from Non Domestic [Tax] Rates” (i.e., lower business tax rates) for fiber rollouts in England and Wales, aiming to “support and incentivise the rollout of broadband and 5G services. Source: <https://commonslibrary.parliament.uk/research-briefings/cbp-8392/>

¹⁸ A PwC study proposes a nationwide small cell information exchange (SCIX), a digital platform that would hold real-time information about availability, backhaul connectivity, monthly rent, and permit status for infrastructure capable of hosting small cells. Source: <https://www.pwc.com/us/en/industry/tmt/assets/5g-small-cell-revolution.pdf>