GSMA

IMT Spectrum Sessions

- UHF
- 3.5 GHz
- 6 GHz
- Future IMT

WRC-23

For the benefit of billions



WRC-23

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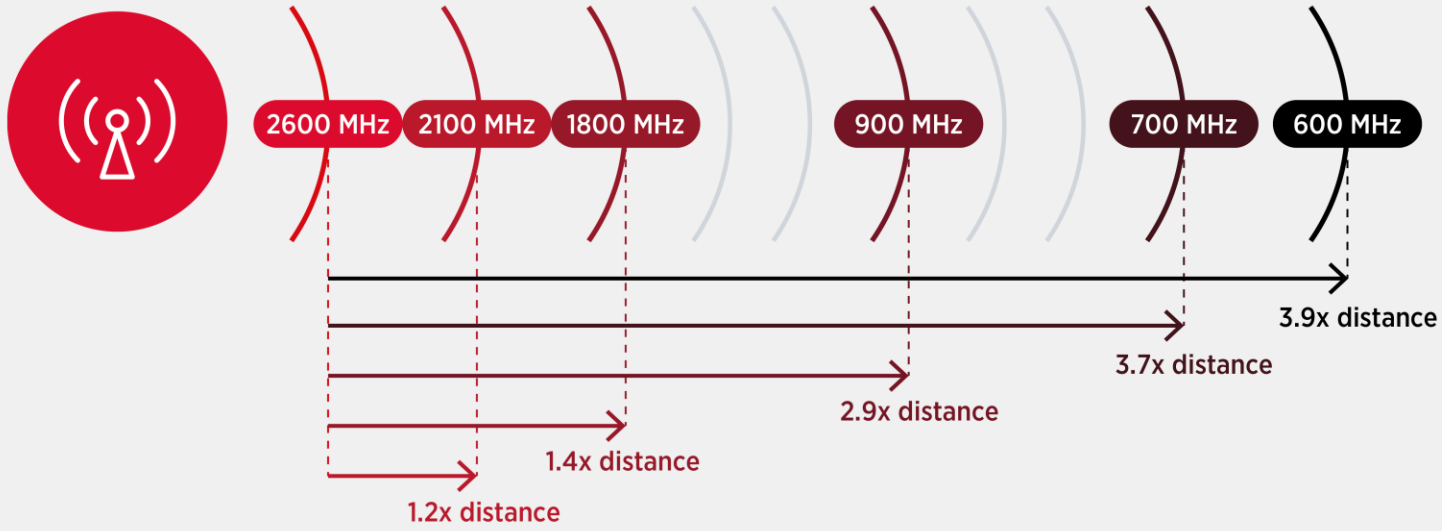
470-694 MHz

Agenda Item 1.5

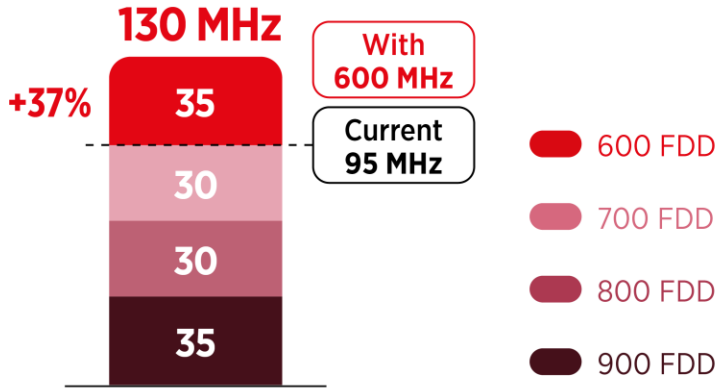
- Digital Equality
- Rural Connectivity
- Rural Economic Growth

For the benefit of billions

Agenda Item 1.5 — 470-694 MHz: Spectrum Needs



Region 1 DL speed impact of 600 MHz



In LMICs, adults in rural areas are

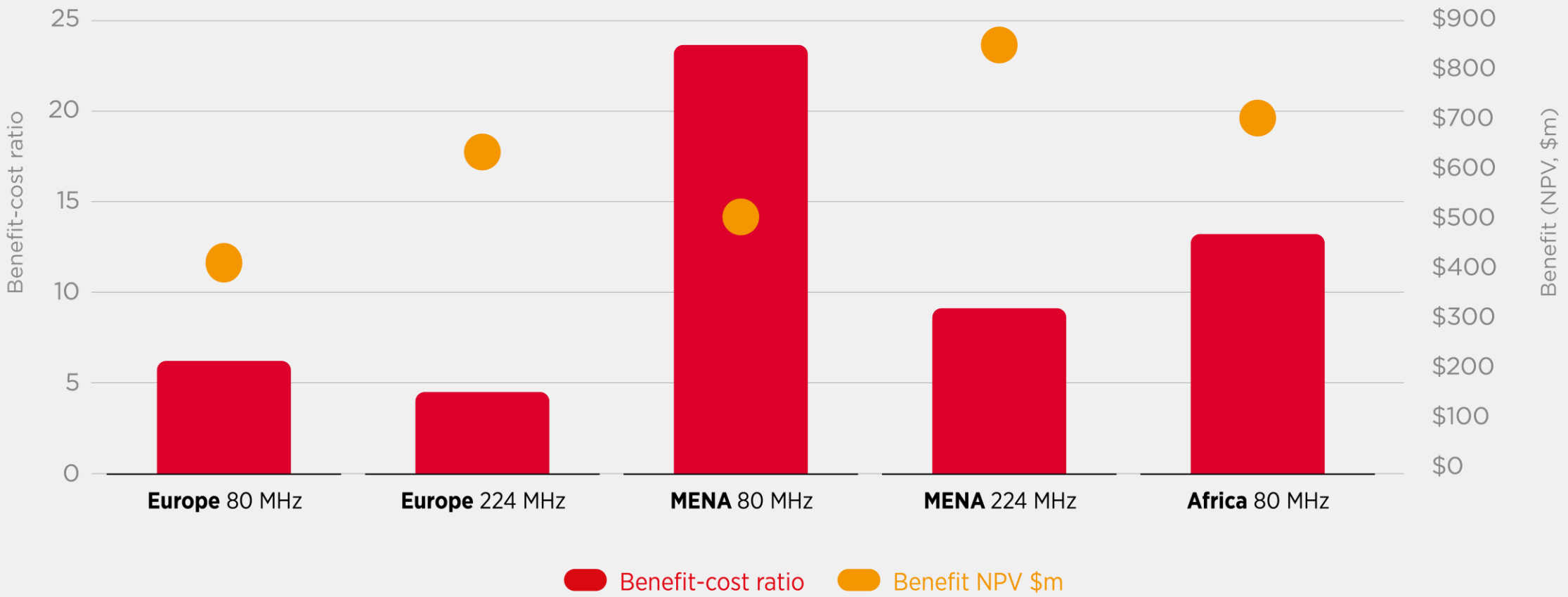
29%

less likely than those living in urban areas to use mobile internet

Low bands can support:

- Poverty reduction
- Education
- Employment
- Health

Low-band mobile has more value than status quo



Position

- **The GSMA supports a primary mobile allocation in the band 470-694 MHz.**
- **This will allow those countries that wish to do so to identify the band, or parts thereof, for IMT.**

Discussion Topics

- Video content distribution is evolving. How can WRC-23 meet the changing needs of viewers in your country?
- Some countries already having little or no DTT usage while others are committed to broadcasting in UHF. What flexible solution will work for all?
- Primary and secondary mobile allocations, IMT identification and NOC are all supported in Region 1. What agreements will support joint evolution of broadcasting and mobile?



For the benefit of our future

Mobile is playing a crucial role in addressing climate change.

Digital connectivity is creating a unique opportunity to reduce carbon across all sectors and enable a cleaner, greener future.

Every day, mobile is helping our planet have a better tomorrow

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3.3-3.8 GHz

Agenda Item 1.2, 1.3

- 5G launch band
- Ecosystem scale
- Make 5G affordable

For the benefit of billions

Agenda Item 1.2 & 1.3 — 3.3-3.8 GHz: Spectrum Needs

Over **100** countries have 5G

New **3.5 GHz** spectrum assignments in **80** countries

Over **75** countries have launched 5G in **3.5 GHz**

Over **200** network launches used **3.5 GHz**

3.5 GHz is the birthplace of **5G**

Usage Gap:

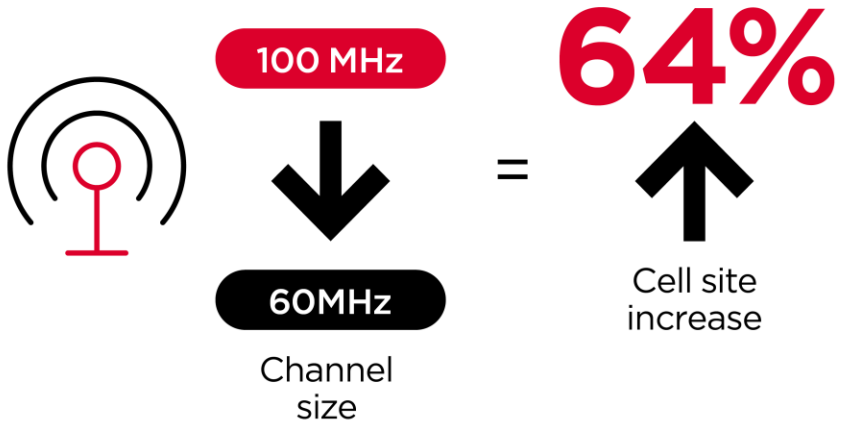
38% Of global population live within MBB coverage but are not using it

3bn people

95%

of the unconnected live in LMICs

Channel size impacts density



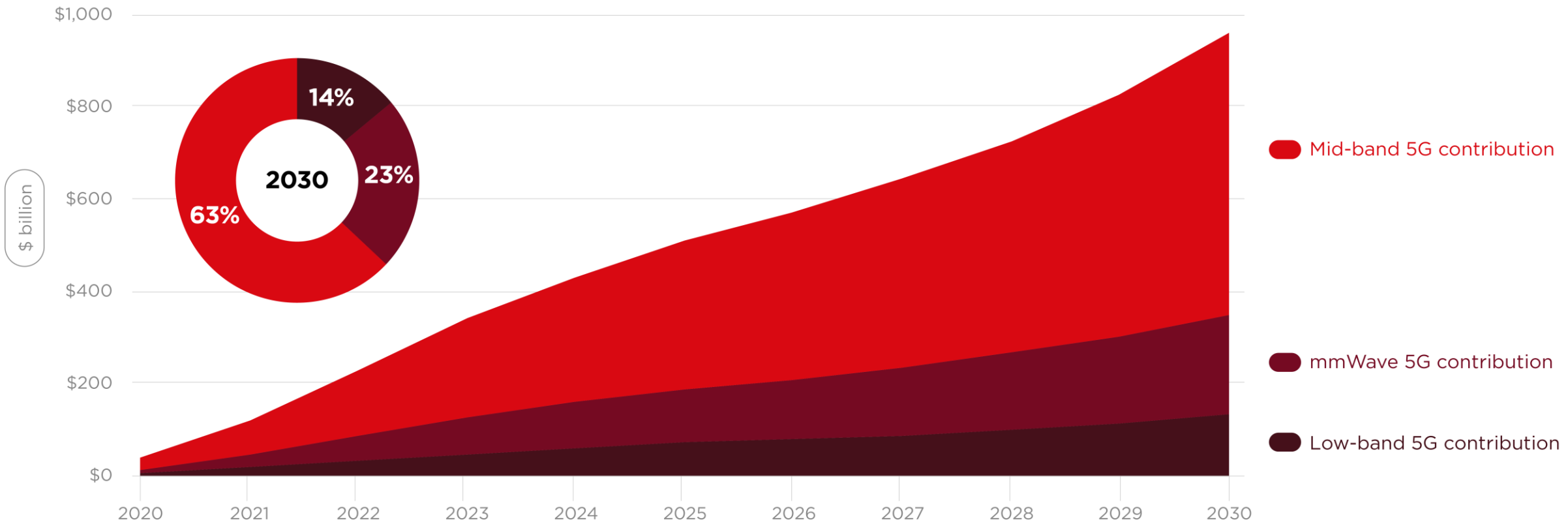
Barriers to MBB adoption

Affordability

A lack of literacy...

...and digital skills

The Socio-Economic Benefits of Mid-Band 5G



Position

- **IMT identification in 3.3-3.4 GHz will provide broad harmonisation but conditions are important**
- **Primary mobile allocation and IMT identification in 3.6-3.8 GHz will provide launch spectrum for 5G.**

Discussion Topics

- Can primary mobile allocation and IMT facilitate cross-border coordination and can existing use of the 3.5 GHz range give confidence on co-existence?
- What conditions should be in any footnote?
  - Will it be regional?
  - 9.21? Table 21-4? 9.17 / 9.18 pfd limit?
- For 3.3-3.4 GHz, will countries above 30°N be able to join? What conditions are necessary?
- IMT identification is not explicitly included in AI 1.3, but what is the disadvantage?



For the benefit of society

Mobile helps societies function harmoniously.

Connected technologies allow service providers to identify and fix problems more efficiently in any community, while greater connectivity can mean that those living within it are more engaged.

Mobile can bring societies together.

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WRC-23

6.425-7.125 GHz

Agenda Item 1.2

- Capacity for speed
- Lower network density
- Lower carbon emissions

For the benefit of billions

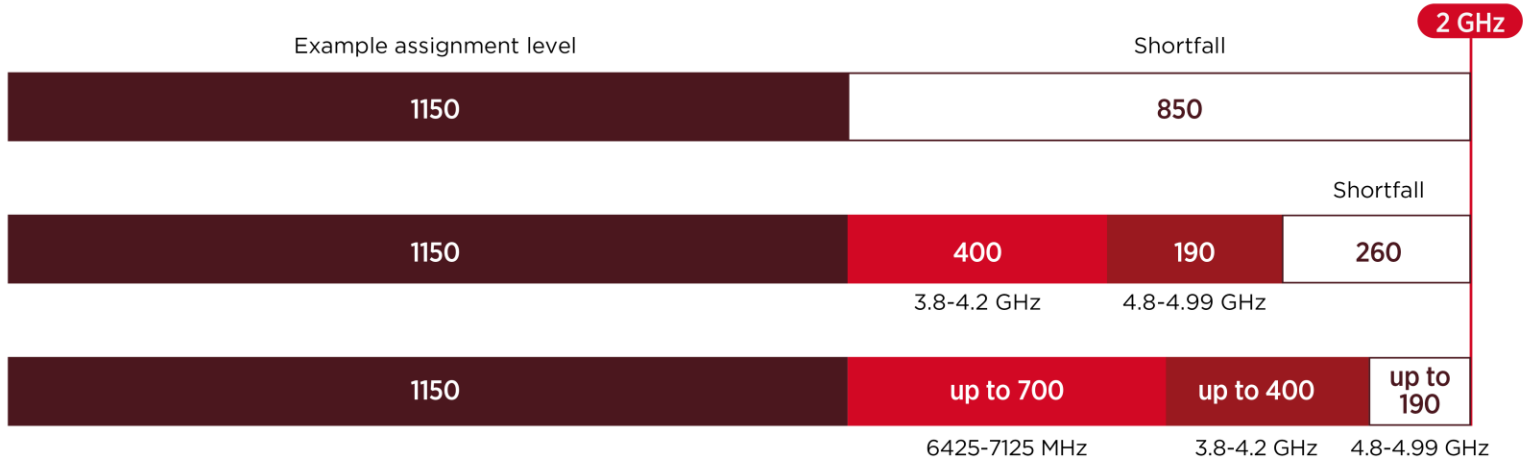
1.5 billion 5G users by end of 2023

Over **280 MNOs** in over **100** countries have launched 5G

255 operators rely on **mid-bands**

2023 will be the **biggest year** for 5G spectrum assignments

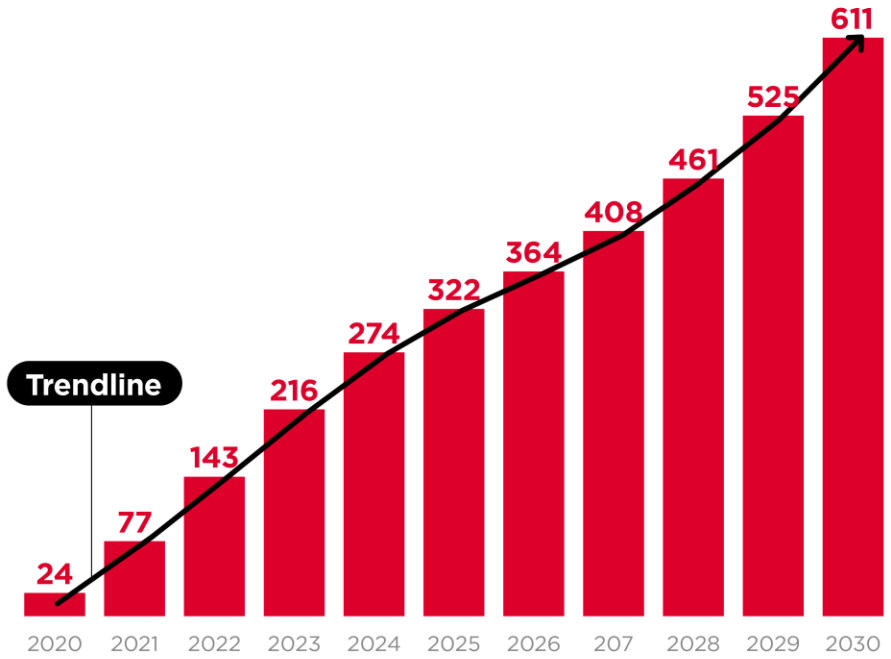
2 GHz of mid-band spectrum is required by 2030



Mid-bands will drive eMBB and industrial connectivity

Sufficient spectrum will **lower costs** and **carbon**

The Socio-Economic Benefits of Mid-Band 5G



Constrained scenario: 40% loss to global GDP impact if mid-band is reduced

Optimal Scenario

$961bn

→ 0.68% of GDP

Constrained Scenario

$594bn

→ 0.42% of GDP

Position

- **Mobile networks will need, on average, 2 GHz of mid-band spectrum per country by 2030. This is challenging to achieve without 6 GHz.**
- **Mobile networks are already highly densified, but 6 GHz can enable the growth of sustainable 5G capacity on existing sites.**
- **The GSMA recommends that 6.425-7.125 GHz is identified for IMT at WRC-23.**

Discussion Topics

- What are the benefits of an IMT identification in 6 GHz?
- How can co-existence of 6 GHz IMT be ensured with other existing services?
  - Expected e.i.r.p. mask is emerging as preferred solution for FSS UL. What form will it take?
  - What conditions are required for 6 GHz IMT to be used as a macro cell band?
  - What measures are needed to ensure coexistence with the fixed services?
- Can use of upper 6 GHz for IMT and lower 6 GHz for RLAN provide a balanced approach to meet overall connectivity needs?



For the benefit of our cities

Mobile is the nervous system of a thriving modern city.

Through analysing IoT data, planners can develop greener transport options and improve traffic flow. Mobile gives citizens access to information that helps them work and play and lets our cities function more efficiently.

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Future IMT
Development

Agenda Item 10

- Meaningful universal connectivity
- Sustainability
- Security

For the benefit of billions

WRC-23

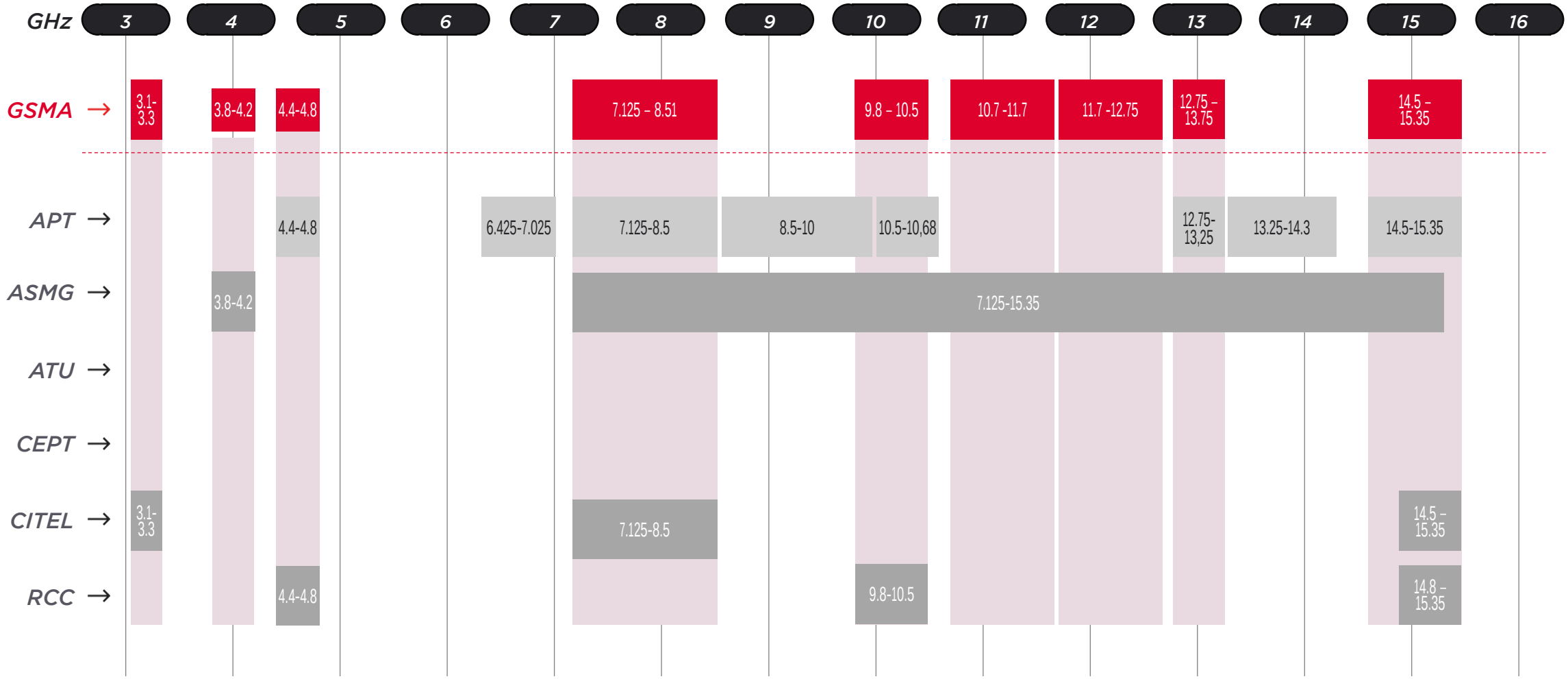


Future IMT networks must embrace:

- Universal meaningful connectivity
- Ultra-fast data rates
- Sustainability and UN SDGs
- Energy efficiency

By delivering ever-present intelligent communication, 6G will contribute to the creation of a more human-friendly, sustainable and efficient society.

Agenda Item 10 – Possible bands for study





For the benefit of our future

Mobile is helping us to live sustainably.

Connected industries can operate more efficiently and help us avoid emissions, while new mobile technologies embrace sustainablity and reduce energy consumption.

Every day mobile is helping our planet have a better tomorrow.

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