

### Continued spectrum supply as a driver of technology change and economic growth



#### Key lessons

- **Saudi Arabian regulator CITC has followed a policy of proactive re-allocation of spectrum from incumbent users (e.g. terrestrial TV and amateur radio) to mobile.**
- **This policy has been combined with frequent spectrum awards, which will provide mobile operators with access to 1420 MHz of sub-6 GHz spectrum by 2023.**
- **The success of these policies to date is reflected in early 5G network deployments by all operators, high levels of 5G adoption and a GDP contribution estimated at 2.4%.**
- **However, there are no further plans for making spectrum available to mobile services, highlighting the urgent need for an updated spectrum roadmap to maintain the current momentum.**

#### Background

With the launch of its National Transformation Plan 2020, Saudi Arabian regulator CITC moved away from administrative assignments for spectrum awards. A key objective of the plan was to develop the digital economy – amongst other things by conducting five spectrum auctions designed to provide efficient, pro-competitive allocations.

Four of these auctions have been carried out to date, with the fifth auction planned for 2022/23. The auctions have relied on best-practice formats, such as the clock or SMRA format. The licences have only contained minor obligations that do not halt the efficient use of spectrum, are assigned for 15-year terms to provide investment certainty, and also allow for spectrum trading under regulations published in 2022.

In preparation for the auctions, the CITC has been proactive in releasing spectrum from legacy users to improve the spectrum supply for mobile services. Following the completion of the fifth and final auction, a total of 1420 MHz will be made available to Saudi mobile operators, placing Saudi Arabia in a global leadership position in terms of spectrum made available to mobile below 6 GHz.

As a result of the awards to date, all of the country's mobile operators have access to large quantities of spectrum in the sub-6 GHz bands and, with the release of the 2300 MHz and 2600 MHz bands, all mobile operators have access to carriers larger than 90 MHz in a single band below 3500 MHz.

However, the country's spectrum release plans have now been finalised and there is currently no future spectrum roadmap for operators for 5G expansion or 6G.

## Benefits from the policy

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Proactive legacy user spectrum reallocation, reorganisation, and coordination has facilitated spectrum allocation to MNOs. In particular, the CITC has:

- Reallocated the 600 MHz, 1800 MHz, 2300 MHz, and 2600 MHz bands from incumbent users including terrestrial TV and amateur radio.
- Planned upgrades to radio altimeters to avoid IMT interference for future allocation of the 3800 - 4000 MHz band.
- Prepared for band-sharing with satellite deployments for low-power applications in the 4000 - 4200 MHz band.
- Allocated spectrum on a technology-neutral basis, allowing 2G and 3G spectrum to be re-farmed.
- Prioritized the availability of contiguous spectrum for mobile operators.



**Proactive spectrum  
reallocation**



**Frequent best-practice  
awards**



**Clear spectrum roadmap  
for 5G**

## Ongoing challenges and final impact

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A positive impact from the significant spectrum supply to date is visible in Saudi Arabia. All three mobile operators deployed 5G networks as early as 2019. As a result of this, 5G penetration is estimated to be as high as 17% by the end of 2022, compared to an average of 3% in the MENA region. Furthermore, the CITC has estimated, based on ITU studies, that the available spectrum contributes 2.4% to GDP in Saudi Arabia.

More steps now need to be taken to guarantee long-term growth. The current spectrum roadmap and proactive frequency reallocation will enable operators to access more than 3 GHz of licenced spectrum by 2025. However, there are no communicated plans beyond 2025 - identifying future bands that will continue supporting the development of the Saudi Arabian market will be critical.