Salt.

Public Consultation on the tender conditions in the procedure for awarding spectrum in the 800MHz, 900MHz, 1800MHz, 2100MHz, 2600MHz FDD and 2600MHz TDD bands

Response of Salt Mobile SA «Salt»

5 December 2025

1. Executive Summary

On 14 October 2025, the Federal Communications Commission ComCom ('ComCom') published a public consultation titled *'Invitation to tender for mobile radio frequencies for the nationwide provision of telecommunication services in Switzerland'* along with the accompanying draft auction rules in a supporting annex. This is the second round of consultations on the topic, follow an initial exchange between ComCom and interested market parties on the renewal of these key frequencies in 2023-2024. ComCom's documents outline the proposed award details for renewing 800MHz, 900MHz, 1800MHz, 2100MHz and 2600MHz (FDD & TDD) licences in Switzerland including detailed auction rules and critical auction parameters, such as spectrum caps and reserve prices for all bands. Salt would like to express our appreciation for the chance to provide feedback on this detailed consultation.

The upcoming award is an important event in the Swiss market. In total, 590[1]MHz are available for renewal, which represent over 70% of the value of all available mobile spectrum in Switzerland at present.[2] Moreover, the spectrum in the auction is of heightened importance to Salt, as it has deployed about 88% of the renewable spectrum (vs. broadly 51% for Swisscom) to the benefit of Swiss consumers and as an engine driving market competition. If Salt was not able to renew the current holdings at a fair price it may have a lasting impact on the dynamics of the Swiss mobile market – and especially for an operator such as Salt, which has invested heavily in recent years (more than CHF2 billion since 2017), greatly contributing to increasing service affordability in the market. A renewal process with the wrong licence conditions may prohibit Salt from continuing on this investment path and acting as an engine for market competition in the future.

Switzerland has strongly benefited from vibrant competition in the mobile market – investment by the operators has been very high, which was made possible by operators paying market-based prices for spectrum. Importantly, ComCom has set up auctions such that the market was able to determine relative prices between bands and there has been strong competition for the available spectrum, with final prices exceeding reserve prices by 60% or more in both 2012 and 2019. We would expect similar dynamics in the upcoming process if ComCom were to follow its historic precedent of setting moderate reserve prices and non-discriminatory spectrum caps, supported by a best-practice auction format.

Salt strongly supports the overall structure of the process proposed by ComCom. In particular, Salt supports ComCom's intention to use a two-stage award in a Clock auction format with exit bids. Salt also supports the proposed second-price sealed bid process for the Assignment Phase. ComCom is relying on the most widely used auction formats, representing international best practice.

However, Salt has very strong concerns about four key aspects of the currently proposed rules, which put at risk the positive market dynamics and may endanger the future of the Swiss mobile market:

- **Licence duration:** Salt believes that an extension in licence duration is strongly warranted to continue providing mobile operators with the certainty required to make the next level of network investments. We therefore propose an extension of the duration of mobile licences to 25 years, in line with international best practice, noting that regulators in many countries in Europe and globally follow the same trend or even provide access to indefinite licences. This increased duration certainty

[1] This includes a guard band of 5MHz in 2600MHz TDD, which cannot be used effectively. Thus, in practical terms, only 585MHz are available

[2] Estimated share of available frequencies as % of the total value of all frequencies available in Switzerland, based on proposed relative reserve prices and currently awarded frequencies. Further details on this calculation are presented in Section 3.2 of this document as well as in Annex A.

will provide the foundation for continued investments in Swiss mobile networks, to sustain the high level of quality provided today.

- **Reserve prices:** Salt is very concerned that ComCom has deviated from the precedent of best-practice reserve prices set in the 2012 and 2019 auctions and has set *unaffordably high levels of reserve prices*, not reflecting critical industry trends that have led to a significant reduction in the value of spectrum since 2019. Salt believes that only a *reduction of reserve prices to CHF468 million* (for a 25-year licence) in total would be in line with key industry developments and would enable operators to compete openly, as was the case in the previous two auctions with prices increasing above reserve prices by over 60%, within the realms of their financial capabilities. If ComCom is not willing to reduce reserve prices then Salt suggests an alternative proposal of extending the licence period to 40 years with payments made in annual equal instalments adjusted in line with the interest rate of the Swiss National Bank.

- **Spectrum caps:** Salt is extremely concerned that the currently proposed total FDD spectrum caps (effectively 54% of mid-band spectrum) provide the *opportunity for spectrum hoarding and inefficient spectrum use by Swisscom* and are discriminatory towards Salt. Salt proposes setting a total *FDD cap in line with ComCom's proposal for the low bands, i.e. around 40%* of available FDD spectrum to prevent further inefficient spectrum use from Swisscom. Lower caps would stimulate the competition and create a more equal playing field in the Swiss telecoms market. As evident from current spectrum usage in the market, Swisscom does not need these high spectrum caps but they could harm Salt's competitive position in the market as it might not have access to sufficient frequencies after the auction.

- **Spectrum portfolios in Stage 1:** Salt believes that the *currently proposed mid-band portfolios for Stage 1 are significantly too small* and set up inefficiently. Salt proposes to adjust the mid-band portfolios such that they allow *each operator to retain 2 blocks of 2×20MHz in the mid bands*, thereby mitigating business continuity concerns – a goal set out by ComCom to 'guarantee minimum allocation of frequencies' – for operators who want to continue investing strongly in the Swiss market in the coming years.

Salt believes that significant amendments are thus required to specific auction rules and parameters to preserve a competitive market with at least three players in Switzerland. The auction should ensure that all operators can acquire their required quantity of spectrum at a reasonable and fair price, so that they can continue investing heavily into the networks rather than committing their free cash flows to inflated spectrum bills.

Licence duration

ComCom has proposed a licence duration of 15 years for the upcoming spectrum auction. Salt believes that this is too short and, in line with recent industry trends, instead proposes that the licence duration is increased from 15 to 25 years.

Investment security is important, especially when technologies and use cases continue to evolve and capital intensity is high. The longer the duration of the licences, the greater confidence operators will have to support new investment in rolling out networks and deploying new technologies and use cases. Furthermore, with a longer licence duration, operators will gain more confidence in the expected payback when investing in their networks. Swiss networks are among the best in the world, as has again been confirmed by the recently released connect test results. In order to continue providing the necessary certainty to operators, Salt strongly believes that an extension of licence duration to 25 years would be beneficial to the Swiss telecoms market.

Such a change in licence duration also would be in line with international best practice, as the need for longer licence durations has been recognised in many international awards:

- Recent European awards in Moldova (2025), Sweden (2025, 2023) and Romania (2022) have all awarded licences for 25 years
- Outside Europe, 25-year or longer licences have been awarded in Venezuela (2025), Chile (2021) and Uruguay (2019)
  - in addition, in 2021 the Brazilian regulator ANATEL awarded licences for 20 years with the option for automatic renewal subject to operators fulfilling coverage and service obligations
  - a similar approach was taken by ISED in Canada, where 3800MHz licences in 2023 were awarded for 20-years with strong expectations of renewal
- Regulators in Germany (2025), Spain (2024) and France (2018) have all effectively extended key spectrum licences for all operators in the market with implicit licence durations of 20 years or more.
- Two of the most reputable regulators in the world, OFCOM in the UK and the FCC in the US have historically awarded effectively indefinite licences (subject to meeting certain conditions).

Reserve prices

ComCom has proposed reserve prices that add up to CHF855m / CHF919m.[3] These proposed reserve prices are extremely high and are not aligned with global trends of falling spectrum prices and ComCom's own levels of reserve prices set in the 2019 Swiss auction.

The reserve prices are particularly impactful if relative cash flow levels between the operators are considered and the sequence of future auctions is taken into account. The proposed reserve prices equate to nearly two years of free cash flows for a company like Salt – in contrast, for Swisscom, these only represent a fraction of a single year's cash flow given differences in scale between the operators. The absolute level of reserve prices thus risks distorting the market. Furthermore, with another renewal due in around 7 years and auctions for further spectrum (e.g. 6GHz) already put on the roadmap, this financial burden may force Salt to significantly reduce network investments to balance potentially high spectrum costs.

Salt therefore strongly urges ComCom to outline and review its methodology and rationale for setting reserve prices as we believe that ComCom's decision has to take into account the following critical industry trends:

- **Spectrum prices have been falling strongly** in recent years, as shown by international benchmarks.
- **Spectrum supply has increased significantly** (and will continue to do so), meaning that operators should pay (significantly) less per MHz compared to prior awards.
- **Industry revenues have decreased significantly over time**, meaning that operators are not able to afford the same level of prices (absolute and on a per-MHz basis) as have been charged historically.
- **Expectations of future traffic growth has been declining** in recent years, meaning that spectrum values will decline – and, in parallel, operators have been able to increase spectral efficiency by investing heavily in the latest equipment and antenna technology.

When putting all the above factors together, Salt believes that a more appropriate level of reserve price is around CHF468 million, when adjusted for the value of a 25-year licence duration, as shown in Figure 1 below. This calculation takes into account all of the above factors and errs on the side of caution (i.e. creating a higher reserve price) when considering each individual factor. For the total portion of spectrum, it does not factor in any future spectrum (e.g. 6GHz) and weighs MHz relative to their likely value (thereby reducing the contribution of larger bands like the 3500MHz band, which are not included in this auction). Salt also bases our estimate on the most cautious view of revenue decline of -2.6% per

[3] Excluding and including the 20% premium for Stage 1 portfolios

annum (based on total telecoms revenues, as reported by BAKOM) compared to a figure of -6% for mobile-only revenues. If future spectrum and mobile-only revenue declines were considered, the adjusted reserve prices would be considerably below the appropriate reserve price level of CHF468m stated above.

Figure 1: Proposed reserve price calculation

Setting reserve prices along the above methodology would be more in line with the precedents set in the 2019 auction and allow for market price discovery via a competitive auction process. Past auctions in Switzerland have shown that, where there is excess market demand, operators will compete heavily, with final prices in both auctions having exceeded reserve prices by over 60%. We would expect similar dynamics in the upcoming process if ComCom were to follow its historic precedent.

If implemented at the currently proposed levels, Salt strongly believes that the proposed reserve prices risk unsold spectrum or an increased inefficiency in the distribution of spectrum. Furthermore, the financial burden of having to pay for the spectrum would dramatically reduce Salt's investment capacity as its cash generation profile is limited compared to Swisscom (Swisscom has an equity free cash flow of over ten times that of Salt). Such reduced investment levels would have an immediate and detrimental impact on Swiss consumers and put at risk the strong position of Switzerland as a leading telecoms market in Europe.

Spectrum caps

The upcoming spectrum award will determine the long-term competitive balance in the Swiss mobile market, as it includes 590[4]MHz of spectrum (58% of all awarded spectrum in Switzerland) with a value of over 70% of all currently allocated spectrum in the market.[2] It is therefore essential that the auction design allows all three operators to secure sufficient low-band and mid-band spectrum.

ComCom's proposed caps of 2×25MHz (38%) of the sub-1GHz spectrum and 2×135MHz (50%) of all FDD spectrum are asymmetric and discriminatory to Salt:

- The caps protect the strong low-band positions of Swisscom and Sunrise, while placing significant risk on the mid bands as they do not guarantee any renewal of spectrum for Salt beyond any mid-band spectrum included in Stage 1.
- This could lead to long-term market asymmetry, reduced competitive dynamics, and weaker investment incentives.

Furthermore, the proposed caps risk spectrum hoarding and inefficient spectrum use by Swisscom at the expense of the smaller market operators. At present, Swisscom only utilises about 50% of the spectrum available for auction, whereas Salt's utilises 88% of the assets subject to renewal. Generous caps would allow Swisscom to acquire spectrum that would have an imminent detrimental impact on Salt, whilst offering no significant immediate benefit to itself. Therefore, setting well-designed spectrum caps is crucial as Swisscom has shown a tendency to take advantage of its financial strength and acquire spectrum up to or near the caps in the previous 2012 and 2019 auctions.

[4] This includes a guard band of 5MHz in 2600MHz TDD, which cannot be used effectively. Thus, in practical terms, only 585MHz are available

Salt proposes alternative caps of 2×85MHz (43%) across 800/900/1800/2100MHz and 2×105MHz (40%) across all FDD bands. Our proposed caps are aligned with European benchmarks (~40%) and ensure all operators can maintain viable spectrum portfolios, supporting competition in the market, efficient spectrum use, and continued service quality for Swiss consumers.

Available spectrum in Stage 1

Salt supports the available spectrum in Stage 1 in the low bands (2 lots across Categories A or B) but considers the proposed mid-band package to be too small. In the mid bands, each operator currently utilises 2×20MHz carriers in at least two of the mid bands. We consider that the essential purpose of Stage 1 is to continue ensuring that operators can renew these critical holdings to minimise any business risks and detrimental impacts for Swiss consumers. This can only be achieved if operators can acquire larger mid-band holdings in Stage 1.

Therefore, Salt proposes to adapt the mid-band packages and mirror the approach chosen by ComCom in the low bands by allowing each operator to specify eight blocks of mid-band FDD spectrum for renewal in Stage 1 (along with 2 blocks of sub-1GHz spectrum) within the constraints of the operator's existing holdings. Our proposed approach strikes a balance between reserving sufficient spectrum to ensure continuation of services and allowing for the marginal value of spectrum to be determined in the second stage of the auction.

Premium of Stage 1 portfolio

Salt considers the application of a 20% premium on Stage 1 portfolios to be unjustified. The purpose of Stage 1 packages is to ensure that all MNOs in the market acquire a minimum viable spectrum in order to guarantee continuity of services. Furthermore, with a Stage 1 premium bidders face an unnecessary complex decision of whether to apply for Stage 1 package if reserve prices are 20% cheaper in Stage 2. Stage 1 reserve prices should thus be the same as for Stage 2. Finally, Stage 1 is an auction, not a direct assignment and prices could increase above reserve price if there are four bidders.

Payment terms

Salt proposes that ComCom allows for spectrum auction payments to be paid in equal annual instalments over the duration of the licence. Allowing operators to pay for the spectrum in instalments would reduce the financial strain on operators and allow smaller operators (like Salt) to compete against financially stronger (and larger) operators (like Swisscom), in line with international best practice.

Salt recognises that this will require a change in the current ordinance in Article 24 of the Regulation on the use of radio spectrum[5] (VNF) which requires payment in a single payment immediately after the concession is granted.

However, a similar change was achieved after the 2012 auction due to the prices (which were only 8% higher than the current proposed reserve prices) allowing the operators to pay in 3 instalments over a four-year period.

Round parameters

Salt considers the proposed maximum bid increment by ComCom of 15% to be too high. As the Clock auction is a relatively quick format and there are limited risks of auction delay, we propose a maximum bid increment of 10% and strongly encourage ComCom to use a 5% bid increment for the majority of the auction. We consider that a smaller bid increment would allow bidders to manage their bid decisions

[5] Article 24 of the Regulation on the use of radio spectrum, available at: https://www.fedlex.admin.ch/eli/cc/2020/1024/de#art_24

and internal processes more efficiently during the auction. In addition, we propose that ComCom limits the round duration range between 30 minutes and 1 hour. Salt believes that this range strikes the right balance between allowing sufficient time for decision making and maintaining an appropriate speed of the auction.

Assignment Phase sequencing

Salt would encourage ComCom to conduct the Assignment Phase sequentially rather than simultaneously for all bands. This would allow bidders to better manage interdependencies between different bands (such as PIM issues) and ensure more efficient and fairer outcome, consistent with international best practices.

2. Introduction

On 14 October 2025, the Federal Communications Commission ComCom ('ComCom') published a public consultation titled *'Invitation to tender for mobile radio frequencies for the nationwide provision of telecommunication services in Switzerland'* along with the accompanying draft auction rules in a supporting annex. This is the second round of consultations on the topic, follow an initial exchange between ComCom and interested market parties on the renewal of these key frequencies in 2023-2024. ComCom's documents outline the proposed award details for renewing 800MHz, 900MHz, 1800MHz, 2100MHz and 2600MHz (FDD & TDD) licences in Switzerland including detailed auction rules and critical auction parameters, such as spectrum caps and reserve prices for all bands. Salt would like to express our appreciation for the chance to provide feedback on this detailed consultation.

The upcoming award is an important event in the Swiss market. In total, 590[6]MHz are available for renewal, which represent over 70% of the value of all available mobile spectrum in Switzerland at present.[7] Moreover, the spectrum in the auction is of heightened importance to Salt, as it has deployed about 88% of the renewable spectrum (vs. broadly 51% for Swisscom) to the benefit of Swiss consumers and as an engine driving market competition. Not being able to renew the current holdings at a fair price may have a lasting impact on the dynamics of the Swiss mobile market – especially for an operator such as Salt, which has invested heavily in recent years (more than CHF2 billion since 2017), greatly contributing to increasing service affordability in the market. A renewal process with the wrong licence conditions may prohibit Salt from continuing on this investment path and acting as an engine for market competition in the future.

To outline our views on the consultation document, the remainder of this document is structured as follows:

- Section 3 includes Salt's comments on the proposed rules within the draft tender documents
- Section 4 includes specific clarification questions on the draft tender rules
- Annex A includes supplementary graphs and analysis

We appreciate ComCom's consideration of our submission and are available to provide any further clarification on the points discussed.

[6] This includes a guard band of 5MHz in 2600MHz TDD, which cannot be used effectively. Thus, in practical terms, only 585MHz are available

[7] Estimated share of available frequencies as % of the total value of all frequencies available in Switzerland, based on proposed relative reserve prices and currently awarded frequencies. Further details on this calculation are presented in Section 3.2 of this document as well as in Annex A.

3. Comments on the draft tender document

3.1 Licence duration

ComCom has proposed licence duration of 15 years for the upcoming spectrum auction. Salt believes that this is too short a duration and, in line with recent industry trends, instead proposes that the licence duration is increased from 15 to 25 years.

Investment security is important, especially when technologies and use cases continue to evolve and capital intensity is high. The longer the duration of the licences, the greater confidence operators will have to support new investment in rolling out networks and deploying new technologies and use cases. Furthermore, with a longer licence duration, operators will gain more confidence in the expected payback when investing in their networks.

In contrast, the proposed licence duration of 15 years risks deterring investment, especially closer to the end of the licence duration. This is because operators are at risk of not renewing existing spectrum during the next spectrum award and therefore capex invested later in the licence period could become obsolete. This risks operators reducing investment towards the end of the duration of the licences, results in lower quality services for consumers.

From an international perspective licence durations vary, but in recent years regulators have usually awarded licences with more than 15 years duration. In particular, in recent years, licence durations have trended upwards, as regulators recognise the importance of longer terms in providing certainty for investment in deploying new network technology.

The need for longer licence durations has been recognised in many international awards:

- Recent European awards in Moldova (2025), Sweden (2025, 2023) and Romania (2022) have all awarded licences for 25 years
- Outside Europe, 25-year or longer licences have been awarded in Venezuela (2025), Chile (2021) and Uruguay (2019)
  - in addition, in 2021 the Brazilian regulator ANATEL awarded licences for 20 years with the option for automatic renewal subject to operators fulfilling coverage and service obligations
  - a similar approach was taken by ISED in Canada, where 3800MHz licences in 2023 were awarded for 20-years with strong expectations of renewal
- Regulators in Germany (2025), Spain (2024) and France (2018) have all effectively extended key spectrum licences for all operators in the market with implicit licence durations of 20 years or more
- Two of the most reputable regulators in the world, OFCOM in the UK and the FCC in the US have historically awarded effectively indefinite licences (subject to meeting certain conditions).

The benefits of longer licence duration has also been recognised by one of the most reputable global industry associations, the GSMA which states that *'A 20-year or longer licence period offers the certainty mobile operators need to expand and upgrade networks. The use of indefinite licence terms can make operators even more willing to invest[8]'.* In addition, while there are limited studies on the relationship between investments and licence duration, a study from Jeanjean, Lebourges and Liang

[8] GSMA, 'https://www.gsma.com/solutions-and-impact/connectivity-for-good/public-policy/wp-content/uploads/2022/03/Mobile-Policy-Handbook-2022.pdf', 2022

has found a *'strong positive correlation between average license duration and tangible investment per capita[9]'.*

Therefore, in order to increase investment certainty for the Swiss operators and to align with best international practices, Salt believes that a 25-year licence duration is more appropriate for the upcoming award in Switzerland.

3.2 Reserve prices

ComCom has proposed reserve prices that add up to CHF855m or CHF919m if the 20% premium for Stage 1 portfolios is considered. ComCom has not provided any methodology explaining how these reserve prices were derived. The proposed reserve prices are extremely high and are not aligned with global trends of falling spectrum prices and ComCom's precedent from the 2019 auction, where it set lower reserve prices than in 2012.

Salt is thus concerned that ComCom's current approach risks overstating the value of spectrum and if the current reserve prices were maintained, this may have undesired consequences for the award, e.g. increased spectrum concentration after the auction or even unsold spectrum assets. To effectively assess the reasonableness of the proposed prices, and respond to ComCom's proposal, Salt requests that ComCom discloses the methodology and assumptions used to calculate the proposed reserve prices.

In the following, we share our view on multiple key factors that are essential to be considered when defining the reserve price for the six spectrum bands in the upcoming award. Each factor is discussed in more detail below.

3.2.1 Affordability considerations

Spectrum prices need to be set in line with the financial capacity of operators. Over the last decade, spectrum supply has increased in Switzerland with the spectrum made available in the 2019 award. In addition, ComCom is considering the release of further spectrum assets in the coming years, possibly in the 600MHz, 1400MHz, 3500MHz, 6GHz and 26GHz bands. ComCom thus needs to set spectrum prices keeping in mind that operators now need to invest regularly into their existing spectrum assets – currently at an interval of about every seven years – whilst needing to maintain further financial resources to invest in future auctions in parallel.

Furthermore, spectrum prices need to be set whilst keeping in mind the natural trade-offs between spectrum and network investments. Every year, operators spend large amounts of money to improve the quality of their networks – and Switzerland has disproportionately benefitted from a competitive market where operators have utilised network investments as a means of differentiation. Salt has heavily invested to the benefit of Swiss consumers – roughly CHF2 billion since 2017.

These investments have greatly benefitted Swiss consumers. The annual 'Connect test' – seen as the main reference point for the quality of mobile networks in the DACH region – shows that Swiss networks scored highest again in 2026 with an average score of 977 out of 1000 for the three operators, beating the performance of neighbouring networks in Germany and Austria by 27 and 21 points respectively.[10] This is despite the fact that the cost of building networks is much higher in Switzerland compared with the other countries due to much higher environmental obligations (NIS Vo). Salt's recent investments

[9] Francois Jeanjean, Marc Lebourges, Julienne Liang, 'The impact of license duration on tangible investments of mobile operators', 2019

[10] Umlaut + connect (2025), The Great Mobile Network Test 2026, available at https://www.connect.de/vergleich/mobilfunknetztest-2026-bestes-handy-netz-connect-3211177.html

into its network showed with a 20-point increase compared to the 2025 results last year, compared to a growth of 6 points for Swisscom and 2 points for Sunrise.

However, the financial means of operators are limited. As a result, any disproportionate increase in spectrum prices will immediately force operators to reduce their network investments. ComCom thus must keep these trade-offs in mind when setting reserve prices in the upcoming auctions.

The reserve prices currently proposed by ComCom are particularly concerning if relative cash flow levels between the operators are considered. As detailed in Figure 2 below, Swisscom generates cashflows over ten times that of Salt. At the same time, the proposed reserve prices imply that the reserve prices for the spectrum currently held by Swisscom is only 0.5 times higher than for Salt, as shown in Figure 3 below.

Figure 2:
Cash flow comparison between Salt and Swisscom – LTM September 2025 [Source: operators' filings and management estimates]

CHFm	Salt	Swisscom	Delta
EBITDAaL	499	4'620	4'121
Equity Free Cashflow	152	1'632	1'480

Figure 3: ComCom Proposed reserve prices as proportion of cashflows

	Total for renewal	ComCom Proposed reserve price	Free Cashflows	Proportion of cashflows	2019 price paid	Annualised price (inc. 2019)	Annualised price
	MHz	CHFm	CHFm	%	CHFm	CHFm	% of cashflows
Salt	160	260	152	171%	95	23.7	16%
Swisscom	255	383	1632	23%	196	38.6	2%

Naturally, the balance of these payments will never equalise at a relative level given the operator's current market positions – however, this strongly indicates the enormous financial advantage that large players have in the market and in spectrum auctions and why smaller competitors such as Salt need to be enabled to compete on a level playing field (especially if their utilisation of spectrum assets is comparable to larger players and significantly more efficient, as we outline later in Section 3.3.2).

Furthermore, the proposed reserve prices are very high at an absolute level, as these equate to nearly two years of free cash flows for Salt – in contrast, for Swisscom, these only represent a fraction of a single year's cash flow given differences in scale between the operators. The absolute level of reserve prices thus risks distorting the market as it would enable Swisscom to acquire a significantly larger portfolio than Salt purely due to affordability and not due to a real spectrum need. Such imbalanced spectrum positions would strongly put at risk Salt's position in the market, as it currently utilises practically all of its spectrum assets (see Section 3.3.2) and would grant Swisscom a competitive advantage from spectrum hoarding.

Salt may be forced to generate savings in other parts of the business, most notably the network, which is the other larger source of capital investment for Salt. Since 2012, Salt has invested heavily in its mobile network (~CHF2 billion since 2017) and is currently in the investment phase of its fast-growing FTTH business, enhancing competition, improving service quality, and lowering prices in Switzerland, and thereby actively improving service affordability. If implemented at the currently proposed levels, Salt strongly believes that the reserve prices risk unsold spectrum and would dramatically reduce Salt's investment capacity for the reasons discussed above. This would weaken the competitiveness of Salt and harm competition in the Swiss telecoms market, which is currently strong with low margins for

operators due to intense price competition for high-quality services. There is no rationale to put the currently healthy dynamics in the market at risk.

Furthermore, the upcoming renewal due in around 7 years and auctions for further spectrum (e.g. 6GHz) already in the pipeline, may force Salt to significantly reduce network investments to balance high spectrum costs beyond the coming years.

The current spectrum prices thus carry general risks with respect to overstretching the financial capacity of the smaller players in the Swiss market and could have negative impacts on market competitiveness and network quality. This ties in with evidence from other studies. A study recently released by the GSMA shows that there is strong evidence that high spectrum prices have a negative impact on the speed of network deployments, the quality of services, and affordability.[11]

3.2.2 Spectrum values have been falling

In addition to the affordability concerns outlined in the previous section, Salt also believes that ComCom's reserve price decision goes against recent spectrum pricing (and associated spectrum value) trends, which should be factored into any decision made by ComCom on the reserve prices.

In particular, international trends have shown a decline in spectrum value since the awards in 2012 and 2019 due to multiple factors:

- **Increased spectrum supply:** The introduction of new 5G bands, such as 700MHz and 3.5GHz, has significantly increased total spectrum availability. This trend will continue with the future awards of the 600MHz, 6GHz, and 26GHz bands.
- **Falling mobile revenues:** Operators' revenues have been declining, particularly since 2019. Figure 4 below shows that, even under the most conservative assumptions, market revenue declined by 2.6% per annum between 2018 and 2023.
- **Increased confidence in technological advancements:** Technological advancements such as mMIMO have increased spectral efficiencies and reduced spectrum demand.
- **Revised mobile traffic growth forecasts:** Traffic growth forecasts have been revised to lower levels in recent years, reducing the value of spectrum to MNOs.

Figure 4: Reported market revenues development since 2018 [Source: Bakom[12]]

	2018-2023 5-year CAGR
Total mobile revenues	-6.0%
Total operating revenues	-3.4%
Fixed, mobile and convergent revenues	-2.6%

In 2019, ComCom brought new spectrum into the market by awarding the 700MHz, 1400MHz and 3500MHz bands. In total, 465MHz were made available in these bands, compared to the 595MHz included in the 2012 auction, increasing spectrum supply by 79%. This highlights one of the most fundamental dilemmas for mobile operators – whilst the revenue side is constantly under threat and has been declining significantly in recent years, the demand for data continues to grow, requiring investment in more spectrum and denser networks to satisfy the requirements of customers. ComCom's 2019 reserve price decision made good sense, as it clearly reflected this trend and set lower reserve

[11] GSMA, 'Spectrum pricing as an enabler in bridging the coverage and usage gaps', 25 March 2025

[12] https://www.bakom.admin.ch/en/transmission-and-broadband-internet-services-on-mobile-connections

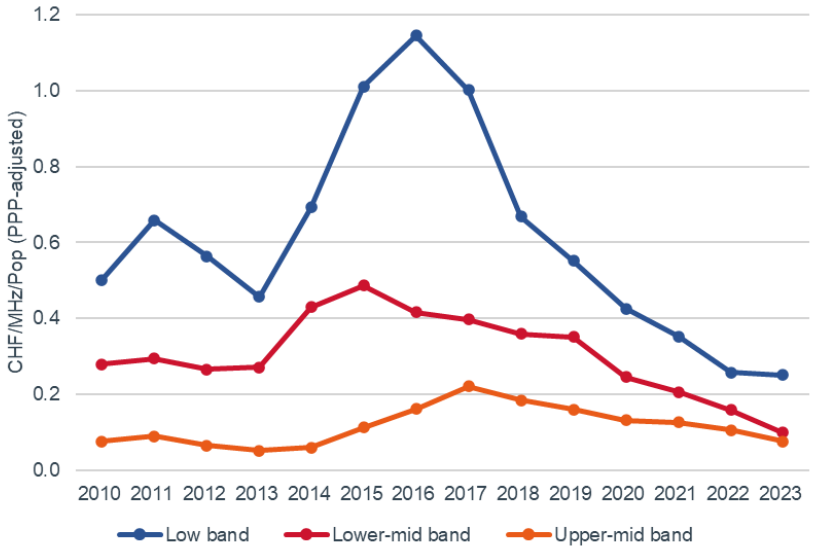
prices for low-band spectrum compared to 2012: CHF16.8m for 700MHz compared with CHF21.3m for comparable low-band spectrum in 2012, which equates to a reduction of more than 20%.

However, for the upcoming auction, ComCom's proposed approach represents a reversal of that approach, with reserve prices rising to CHF23.1m / CHF27.7m[13], an increase of 8% / 30%[13] compared to 2012 and 38% / 65%[13] compared to 2019. This is despite ComCom having already announced that it plans to hold future auctions for additional spectrum, which will create further costs for mobile operators.

ComCom's approach stands in contrast to international trends. Since a peak in 2015–2017, spectrum prices have fallen significantly. Figure 5 below shows that average prices for low-band spectrum have fallen by around 55% since 2012, while lower-mid-band spectrum (1800/2100MHz) has fallen by about 63%.

These declines have been driven by a significant increase in available spectrum — including the release of new 5G bands such as 700MHz and 3.5GHz — and, more recently, improved visibility over future spectrum supply (e.g. 600MHz, 6GHz). At the same time, operator revenues have remained flat or, in the case of Switzerland, even declined. Although expectations of future spectrum availability would have been factored into earlier valuations (for example, anticipated 5G bands in 2012), there was uncertainty at the time. Now that these bands have been awarded and ComCom has announced plans for future auctions of additional spectrum, the current value of the spectrum originally auctioned in 2012 will have correspondingly decreased.

Figure 5: Spectrum pricing trend since 2010 [Source: Aetha]



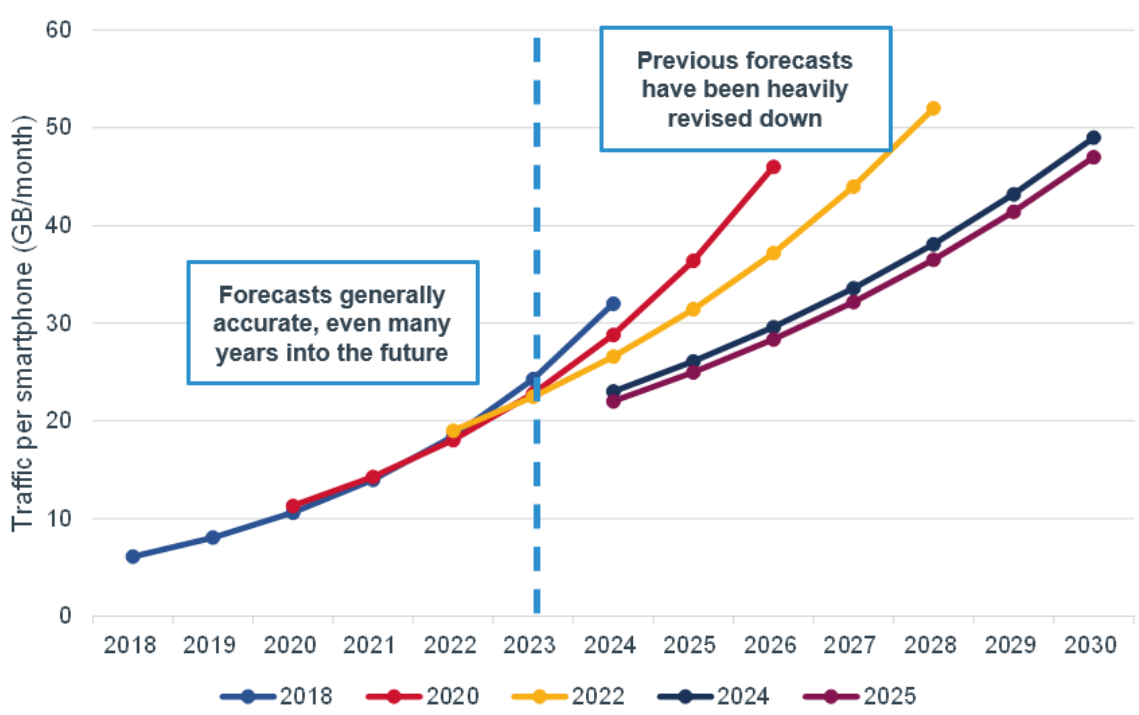
Although improvements in technology are factored into operators' valuations, expectations for massive MIMO have increased significantly compared with ten years ago. Massive MIMO is now expected to be widely deployed in FDD bands, including in the 1800MHz and 2100MHz bands, which will substantially enhance the capacity available. This development was unlikely to have been fully incorporated into earlier valuations.

The final important factor behind the recent decline in spectrum values is the change in traffic growth expectations. As shown in Figure 6 below, until around 2023 industry mobile traffic forecasts were relatively accurate, enabling operators to predict network demand with confidence. In the past few

[13] Excluding and including Stage 1 premium of 20%

years, however, these forecasts have been revised downward to reflect slowing usage growth. As a result, the industry had previously overestimated today's traffic levels, and current expectations of future growth are more conservative than they were several years ago, contributing to lower spectrum valuations.

Figure 6: Forecasts of monthly mobile traffic in Western Europe 2018–2030 [Source: Ericsson Mobility Reports 2018-2025][14]

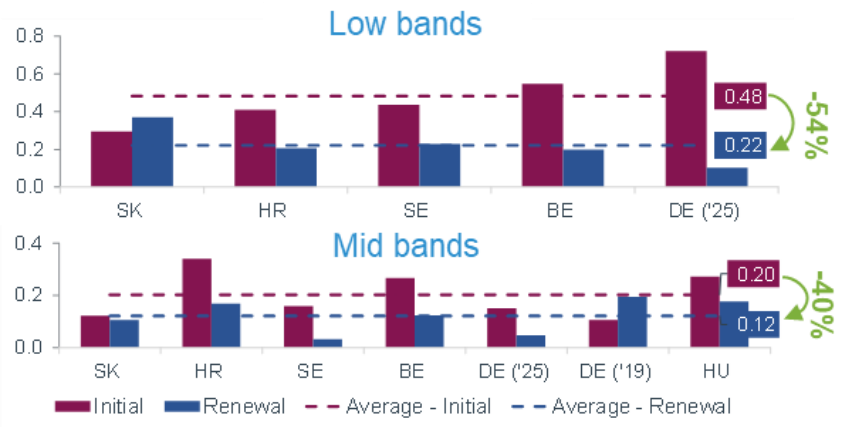


The trends of declining spectrum prices are further highlighted by recent renewal awards in Europe. These awards include spectrum bands that are reaching the end of the current licence but are widely deployed across the operators' networks.

The prices observed in these renewal processes provide clear evidence that spectrum is becoming less expensive over time, particularly when comparing licences that were awarded previously. Figure 7 below shows that, on average, renewal final prices in the low bands are 54% lower compared to the initial auction prices. The same trend also holds in the mid bands, where final prices for renewal processes are on average 40% lower in comparison to the initial auctions. In fact, all benchmarked awards below, with the exception of the low bands renewal in Slovakia and the mid band renewal in Germany in 2019, have resulted in lower renewal prices than the initial assignments. Aggressive bidding in both the Slovakian and German auctions was a direct consequence of bidding from a fourth operator (Swan in Slovakia and 1&1 in Germany) which previously did not hold any spectrum in the auctioned bands before the renewal awards.

[14] Ericsson reports a current year figure and a forecasted figure for six years' time. We have assumed a constant CAGR in our analysis.

Figure 7: Benchmarks of final prices in European renewal awards [Source: Aetha]



Salt believes that the above trends and evidence should be factored into any reserve price decision. We therefore urge ComCom to outline its methodology for setting reserve prices and strongly believe that ComCom should revert back to the precedent set in 2019. This approach would allow the market to determine the fair value of the spectrum, in contrast to the current approach, where the proposed reserve prices are set 44% above the reserve prices in 2012 and only 8% below the total final price paid in 2012. This approach does not allow the market to determine the value of spectrum despite significant evidence that the value of spectrum has declined.

Below, we outline what we consider to be realistic and fair reserve prices for Switzerland in light of the key trends outlined in this section (increasing spectrum supply, limited affordability, falling traffic forecasts, falling mobile revenues).

Methodology for calculating proposed total reserve prices:

Salt believes that a more appropriate level of reserve price is around CHF468 million for a 25-year licence, as shown in Figure 10 below. This calculation takes into account the above factors and errs on the side of caution (i.e. creating a higher reserve price) when considering each individual factor.

The calculation works off four factors to calculate the appropriate reserve prices for the upcoming auction:

- **2012 reserve prices**: The starting point for the analysis are the prices levied in the 2012 auction. We have used the total sum of reserve prices – adjusting to equivalent prices for 15-year licences, e.g. using CHF8.3m for all 2100MHz lots.[15]
- **Proportion of total spectrum:** As outlined above, one of the key factors that should contribute to a reduction in reserve prices is the amount of spectrum in the market. To reflect value differences between spectrum bands, we have applied different weights to different frequency ranges.
- **Revenue reduction**: Whilst industry revenues were relatively stable between 2012 – 2019, there has been significantly increased commercial pressure since the 2019 auction. This means that affordability for operators is reduced accordingly, and consequently, this is factored into our calculation as well.
- **Licence duration**: A longer licence period of 25 years will increase the value of the spectrum to the operators. We have used a Weighted Average Cost of Capital (WACC) of 8% to adjust for the additional value of a 25-year licence compared to a 15-year licence.

[15] Details of the 2012 reserve price adjustments are provided in Annex A.

In assessing both the weighting of total available spectrum and the impact of reduced revenues, we have taken conservative assumptions – conservative in this context implying a higher reserve price, so as to not propose an unreasonably low reserve price for the upcoming auction.

For the total portion of spectrum, our approach does not factor in any future spectrum (e.g. 6GHz) and weighs MHz relative to their likely value (thereby reducing the contribution of larger bands like the 3500MHz band, which are not included in this auction).

Figure 8 below details the weighting assumptions used in the calculation for the proportion of total spectrum, following Salt's proposal for low- to mid-band ratios detailed in Section 3.2.4. As discussed above, our calculations are conservative and only take into account existing spectrum in the market - considering the additional spectrum released in 2019, the 2012 spectrum proportion is reduced from 100% at the time of the initial award to 71% today. For information purposes, if future spectrum is also included in the calculation, this would further reduce the 2012 proportion of the total available spectrum to 60% (noting that a 50% delay factor is assumed on future bands to account for the fact they are not available at the time of the upcoming auction).

Figure 8: Weighted spectrum availability assumptions

	2012			2019			Future spectrum		
	Total MHz	Weighting	Weighted MHz	Total MHz	Weighting	Weighted MHz	Total MHz	Weighting	Weighted MHz[16]
Sub-1GHz	130	4	520	190	4	760	260	4	900
1800/2100MHz	270	2	540	270	2	540	270	2	540
2600MHz FDD	140	1	140	140	1	140	140	1	140
2600MHz TDD	45	1	45	45	1	45	45	1	45
SDL	-	2	-	105	2	210	105	2	210
3.5/6GHz	-	0.2	-	300	0.2	60	900	0.2	120
mmWave	-	0.1	-	-	0.1	-	2400	0.1	120
Total	**585**		**1245**	**1050**		**1755**	**4120**		**2075**
2012 bands percentage			100%			71%			60%

In regard to the revenue reduction in the Swiss market, Figure 9 below provides information on market revenues as reported by BAKOM for the period 2018-2023 across three categories with the following reduction in each category for the period:

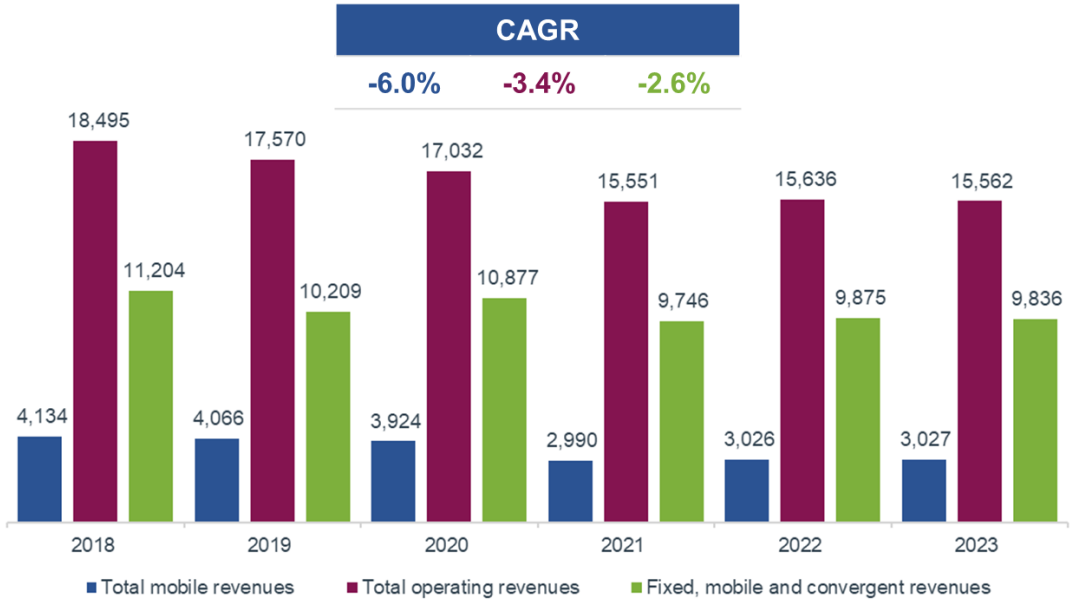
- **Total mobile-only revenue:** 6.0% per annum decline – based on the line item 'Services on mobile networks'[17]
- **Total operating revenues:** 3.4% per annum decline – based on the line item 'Total operating revenue'[17]
- **The sum of fixed, mobile and convergent revenues:** 2.6% per annum decline – based on the line items: 'Services on fixed networks', 'Services on mobile networks' and 'Convergent grouped offerings (fixed and mobile network)'[17].

[16] Includes a 50% delay factor assumption for future spectrum bands

[17] BAKOM, 'BAKOM Finanzdaten und Personalbestand'

Our proposed reserve prices are based on the most cautious view of revenue decline of 2.6% per annum (the sum of fixed, mobile and convergent revenues) compared to a figure of 6% per annum decline for mobile-only revenues.

Figure 9: Reported market revenues development [Source: Bakom[18]]



As discussed above, Salt strongly believes that the appropriate level of reserve price is around CHF468 million for a 25-year licence. Figure 10 below summarises our methodology for calculating this figure, starting from the effective reserve price in 2012 of CHF637m (adjusted to the 15-year licence equivalent prices) and taking into account the increase in spectrum availability, the reduction in market revenues and adjustments for 25-year licence duration.

As discussed in this section, for the spectrum availability we have not included the effect of future spectrum and taken the factor of 71% - the weighted value of 2012 spectrum in the context of the total spectrum in the market after the 2019 auction. Furthermore, we also consider the most conservative approach of the decline in total telecoms revenue considering -2.6% per annum or a 17% reduction over a 7-year period between 2019 and 2026. We also adjust by a factor of 125% to reflect the additional value of the spectrum over a 25-year licence period compared to the proposed 15 years using a WACC of 8%.

For comparison purposes, the proposed reserve prices of CHF468m for a 25-year licence equates to CHF376 million for the currently proposed 15-year licence.

Figure 10: Proposed reserve price calculation

If instead of the approach currently used, which errs on the side of caution, we consider the future spectrum in the market and mobile-only revenues, the corresponding factors then reduce to 60% and 65% for the proportion of spectrum and the revenue reduction respectively. Using these two factors

[18] https://www.bakom.admin.ch/en/transmission-and-broadband-internet-services-on-mobile-connections

brings the resulting reserve price down to CHF309 million for 25-year licence duration, highlighting the cautious approach used in Figure 10 above.

3.2.3 Reserve prices should be set substantially below spectrum value

The aim of an auction is to determine the suitable market price for spectrum, in light of competitive tension, expected market demand and future market developments including future spectrum supply. For an auction to provide a meaningful spectrum price as an estimate of market value, the auction format has to allow for competition to occur and for reserve prices to be set below market prices.

Regulators typically set reserve prices significantly below market prices to ensure that all spectrum is sold (in case the regulator's own assessment overestimated market demand) and to enable the auction to set prices, not just on an absolute level per band but also relatively between bands. This principle was applied by ComCom in both the 2012 and 2019 auctions, which both experienced significant competition as final prices exceeded reserve prices by over 60% as detailed in Figure 11 below.

Figure 11: Auction markup in 2012 and 2019 auctions [Source: Bakom]

	Reserve price (CHFm)	Final price (CHFm)	Auction markup %
2012 award	612.9	996.3	63%
2019 award	210.0	379.3	81%

We would expect similar dynamics in the upcoming process if ComCom were to follow its historic precedents of setting moderate reserve prices. In the low bands, competitive tension will arise as a result of the large 900MHz existing holdings of Swisscom and Sunrise (2×15MHz) and the corresponding low 900MHz existing holdings of Salt (2×5MHz). Whilst 2×5MHz was a suitable portfolio to manage voice demand for 2G and 3G, Salt may determine that it would like to extend its portfolio, in light with the holdings of most other operators in European markets in the 900MHz. Similarly, in the mid bands, Salt is currently utilising most of its assets (as shown in Section 3.3.2 below) and may look to extend its holdings to cater for growing demand (noting that Swisscom is not utilising a reasonable share of its spectrum in the mid bands at present). Similarly, Sunrise only holds a limited portfolio of 2×10MHz in 2100MHz and is likely to strive for an expansion. On the other hand, Swisscom has tended to acquire as much spectrum as possible and will look to extend (or at least, defend) its current holdings. Finally, operators may look to make their holdings more efficient, acquiring larger carriers over a smaller number of bands. All these aspects are likely to lead to a competitive process, subject to reserve prices being sufficiently low so as to not exceed actual market values for the spectrum.

This trend is also very notable in international auctions. Benchmarks of recent European auctions show that final prices typically increase by ~66% compared to the reserve prices set – this is in line with previous Swiss auctions as detailed above. However, ComCom's proposed reserve prices are 44% above the reserve prices in 2012 and only 8% below the total final price paid in 2012. Such high reserve prices reduce the scope for competition in the auction and risk leading to inefficient outcomes with unsold spectrum.

If reserve prices are set too high, there is a real risk that spectrum will remain unsold – which does not maximise the efficiency of use of this scarce resource. Several international examples demonstrate the negative consequences of setting reserve prices above market levels, many of these examples had reserve prices lower than proposed by ComCom. Recent examples are provided in Figure 12 below.

Figure 12: Examples of unsold spectrum in recent awards [Source: Aetha]

	Unsold spectrum
Moldova 2025	2×20MHz of 700MHz, 15MHz of 700MHz SDL, 50MHz of L-band, 100MHz of 2300MHz, 2×30MHz of 2600MHz & 260MHz of 3.5GHz
Vietnam 2025	2×10MHz of 700MHz
Thailand 2025	2×10MHz of 850MHz & 35MHz of L-band
India 2024 and 2021	Multiple lots across all bands in different regions
Saudi Arabia 2024	Initial auction cancelled due to lack of interest due to high prices, 700MHz SDL remained unsold when auction was held
Romania 2023	2×15MHz of 700MHz, 15MHz of 700MHz SDL & 90MHz of 3.5GHz
Colombia 2023	2×5MHz of 700MHz, 2×5MHz of 1900MHz, 2×15MHz of AWS and 2×10MHz of 2600MHz
South Africa 2022	2×10MHz of 850MHz
Malta 2021	Full 700MHz and 26GHz bands & 100MHz of 3.5GHz
Brazil 2021	Portions of the 700MHz, 2300MHz, 3.5GHz and 26GHz across multiple regions
Thailand 2018 and 2020	2×35MHz of 1800MHz
Denmark 2019	40MHz of 2300MHz
Mexico	Multi-band auction including 5G bands cancelled due to high reserve prices

3.2.4 Reserve price ratios

Frequencies such as the sub-1GHz typically have a higher value per MHz compared to higher frequencies such as the mid-bands (1800MHz or 2600MHz). This has been reflected as ComCom is proposing a low-band to mid-band reserve price ratio of 1.5×.

However, as shown in Figure 13 below, international benchmarks typically have a ratio between low and mid bands of 2.0× or higher. ComCom's proposed ratio of 1.5× is lower than all benchmarked values.

The previous ratio used by ComCom in 2012 of 2.6× is also much more closely aligned with European benchmarks compared to the proposed reserve price ratio of 1.5× for the upcoming auction.

Figure 13: Low- to mid-band reserve price ratio European benchmark [Source: Aetha]

	Currency	Low-band reserve price	Mid-band reserve price	Low-band to Mid-band ratio
Slovakia 2025	EURm	17	6	2.8×
Croatia 2023	EURm	7	2	3.5×
Sweden 2023	SEKm	150	35	4.2×
Belgium 2022	EURm	24	9	2.6×
Romania 2022	EURm	14	6	2.3×
Hungary 2021	HUFm	12 000	6000	2.0×
Montenegro 2021	EURm	0.9	0.4	2.2×
Portugal 2021	EURm	19	4	4.8×
Netherlands 2020	EURm	75	35	2.1×
Switzerland 2012	**CHFm**	**21.3**	**8.3**	**2.6×**
Switzerland proposed	**CHFm**	**23.1**	**15.4**	**1.5×**

Therefore, Salt proposes a low- to mid-band ratio of 2.0× which is more in line with the European benchmarks – whilst still being at the lower end to reflect the value of the mid-bands in Switzerland.

In terms of the 2600MHz FDD and TDD, we consider ComCom's proposed ratio of 2.0× between the mid bands and 2600MHz FDD and 1.0× between the mid bands and 2600MHz TDD to be appropriate.

Therefore, Salt considers that a reserve price ratio of 4:2:1:2 (800/900MHz:1800/2100MHz: 2600MHz FDD:2600MHz TDD) between all auctioned bands to be appropriate.

Considering Salt's total proposed reserve price of CHF468m (with no premium on Stage 1 portfolios and adjusting for 25-year licence duration) and the reserve price ratios outlined above, Salt proposes a reserve price per lot as detailed in Figure 14 below:

Figure 14: Proposed reserve prices by band

	# Lots	Proposed reserve price per lot (CHFm)
800MHz	6	15.1
900MHz	7	15.1
1800MHz	15	7.6
2100MHz	12	7.6
2600MHz FDD	14	3.8
2600MHz TDD	2	7.6

3.3 Spectrum caps

The upcoming spectrum award in Switzerland will include more than 55% of all available spectrum in Switzerland. When accounting for differences in spectrum values between bands, the weighted available spectrum accounts for 71% of the value of all spectrum in the market, as outlined in Section 3.2.

As a result, this auction will effectively determine the spectrum distribution and competitive landscape in Switzerland for the foreseeable future. In this context, it is essential that ComCom adopts an auction framework that ensures that all three operators can reacquire a critical mass of spectrum across both the low-band and mid-band frequencies. If the spectrum caps allow one operator to consolidate or extend an already strong spectrum position, the resulting imbalance would be exceptionally difficult to reverse. This would weaken network-based competition, reduce innovation, and undermine investment incentives. By contrast, a well-designed spectrum cap structure can promote efficient use of spectrum, maintain competitive pressure, and support long-term service quality and affordability for Swiss consumers.

In the draft tender rules, ComCom proposes the following spectrum caps to apply to each bidder:

- 2×25MHz (38%) of sub-1GHz spectrum (Categories A and B)
- 2×135MHz (50%) of total available FDD spectrum.

Salt is severely concerned about the asymmetry of the caps and the resulting implications. These caps are asymmetric as they limit an operator to 38% of the available sub-1GHz (FDD) spectrum, whilst allowing any operator to acquire up to 50% of the total FDD spectrum in the award. With the cap strongly limiting low-band acquisition options, the implied mid-band FDD cap is even higher than 50%. Assuming a bidder acquires up to the cap of sub-1GHz spectrum (2×25MHz), this leaves a total of 2×110MHz to be acquired in the remaining FDD mid bands, i.e. 54% of all available mid-band FDD spectrum (a total of 2×205MHz in 1800/2100/2600MHz).

We strongly believe that these asymmetric caps are discriminatory to Salt. The caps protect the strong positions of Sunrise and Swisscom in the low bands, as they guarantee renewal of at least 60% of the operators' current spectrum assets. At the same time, the proposed caps place significant risk on the mid bands. With a cap per bidder of 2×110MHz (assuming maximum acquisition in the low bands), two operators can jointly acquire up to 2×220MHz, i.e. more than the total amount of spectrum available. The caps therefore effectively do not guarantee any renewal of FDD mid-band spectrum for a smaller player such as Salt beyond the Stage 1 portfolios, noting that the current Stage 1 portfolios carry significant limitations in their current form, as detailed in Section 3.4.

The currently proposed caps could thus limit a smaller operator such as Salt to a portfolio of just 2×40MHz – 2×15MHz as implicitly reserved by the low-band caps and 2×25MHz as implicitly reserved by the currently proposed Stage 1 portfolios in the mid bands. If Salt were placed in such a situation, it would equate to a loss of 50% of Salt's spectrum holdings in the awarded FDD bands – an untenable long-term position in the market.

The impact of such a drastic scenario on Salt would be immediate – a large portion of our currently deployed FDD spectrum would not be usable anymore (as shown in the following section, Salt currently uses 88% of its FDD spectrum across the network). Losing 50% of our available (and deployed) spectrum would drastically reduce our network capacity, thereby multiplying (drastically) the number of congested cells in the busier hours – this would lead to higher latency, extended page-loading times, more dropped calls and much lower throughput speeds for consumers. Outside the busy hour, the maximum achievable speeds for our users would also be cut by almost half of their current value – in contrast, Salt's competitors would benefit from larger portfolios and could thus increase their network performance. As a result of all this, Salt would face many complaints from its current subscribers,

negatively affecting its ability to gain and maintain subscribers. Salt would thus be unlikely to maintain its current market share momentum, which has been a key driver in improving the competitiveness in the Swiss market, when it comes to consumer prices, data consumption and service quality (we note that Salt has gained market share from 16.6% in 2019 to 18.3% in Q4 2024[19], which has fuelled market competition).

Such a highly asymmetric and disadvantageous situation would therefore ultimately lead to further increased market asymmetry, reduced competitive pressure, and weaker investment incentives for all operators. This is particularly true as the spectrum that Salt would lose is in the FDD mid-bands. These bands are the workhorse of today's networks, and operators need sufficient mid-band spectrum to remain competitive, as we also outline in Section 3.4 below.

Unfortunately, in the absence of tighter spectrum caps, the emergence of a scenario where larger operators, particularly Swisscom, bid aggressively and up to its/their spectrum cap is far from unrealistic. A look at recent spectrum auctions in Switzerland reveals that Swisscom has displayed a tendency to acquire most of the available spectrum, as discussed in the following section.

3.3.1 Swisscom's behaviours in recent auctions and implications for caps

Spectrum caps become more important if there is a real threat of one (or several) of the market players buying spectrum based on the acquisition restrictions placed on them due to a view that such spectrum will ultimately create a competitive advantage because it is taken out of the hands of competitors, even if it is not used by the acquiring party itself (so-called spectrum hoarding).

By looking at historic spectrum awards, Swisscom has shown a tendency to acquire up to or near to the specified caps. This holds for both the previous 2012 and 2019 auctions:

- *2012:* Swisscom acquired the maximum possible spectrum in the 800MHz, 900MHz and 2100MHz and acquired 2×30MHz of the maximum permitted 2×35MHz in the 1800MHz. The only FDD band, where Swisscom did not bid overly aggressive was the less valuable 2600MHz FDD, where it acquired 2×20MHz (compared to Salt's 2×20MHz and Sunrise's 2×25MHz).

- *2019:* Swisscom acquired the maximum possible spectrum permitted by the caps in the 700MHz, 1400MHz, 3.5GHz and squeezed Sunrise in the low bands to accept only 2×5MHz and Salt in 3500MHz to only accept 80MHz. Many studies clearly show that operators aim to acquire 2×10MHz in low bands wherever possible and 100MHz in mid bands[20]. These requirements are also evident from historic spectrum auctions – for example, in the Belgium 2022 auction Telenet reduced demand to 2×5MHz of 700MHz only when acquiring 2×10MHz became ~6 times more expensive. These demonstrate that the caps were used by Swisscom to put its competitors in a less advantageous spectrum position.

Setting spectrum caps that limit Swisscom to a reasonable share of the spectrum is thus essential. The previous awards have enabled Swisscom to acquire a dominant and very large spectrum portfolio. If the need for this spectrum were demand-based, i.e. all of the acquired spectrum would be desperately needed to serve customers, the setting of similar caps could possibly be defended. However, if reasonable chunks of the spectrum remain unused after the auction, it indicates that spectrum may have been acquired for strategic reasons, which in itself leads to inefficient spectrum use in Switzerland (i.e. spectrum hoarding). It is one of ComCom's regulatory duties to ensure efficiency of spectrum use – however, as shown in the following section, the recent caps have led to significant differences in spectrum usage and utilisation and thereby stand in stark contrast to ComCom's remit to oversee more

[19] ComCom, '*Mobile market shares'*, https://www.comcom.admin.ch/en/market-share

[20] GSMA, '*5G spectrum guide', https://www.gsma.com/connectivity-for-good/spectrum/5g-spectrum-guide-2/*

efficient spectrum usage. Swisscom does not need such large caps but they may lead to a situation that Salt cannot offer the same quality of service due to lack of spectrum. As a result, ComCom should strongly consider a significant tightening of the spectrum caps.

3.3.2 Current spectrum utilisation and implications on spectrum caps

Modern network analysis tools allow operators to gain a very solid understanding of spectrum usage within a country. To understand its competitive positioning, Salt regularly reviews the deployment of mobile spectrum bands by all three operators across the entirety of Switzerland.

For each of the spectrum bands, Salt has gained insights into the deployments of the other MNOs through publicly available data,[21] which allows Salt to compare these figures with our own utilisation.

As shown in Figure 15 below, Swisscom currently has the lowest utilisation of its spectrum assets. Overall, it has currently deployed 48% of the spectrum assets that it holds – including the assets acquired in the 2019 auction. Even when accounting for only the spectrum subject to renewal, the figure merely rises to 51%. In comparison, Salt utilises 72% of its total spectrum assets, rising to 88% when only considering the spectrum subject to renewal across its ~3500 sites.

The main areas where Swisscom demonstrates particularly low utilisation of the spectrum subject to renewal are:

- 900 MHz where 2×5MHz is widely used for UMTS, but the remaining 2×10 MHz is not widely deployed for LTE
- 1800/2100MHz bands, where only a 2×20MHz carrier out of the total 2×30MHz holdings is utilised
- 2600MHz TDD band, which has not been deployed at all

These levels of utilisation, 13 years after the licences were awarded, clearly illustrate the current inefficient distribution of spectrum.

Salt and Sunrise both hold 160MHz of spectrum subject to renewal, with current utilisation rates of 88% and 71% respectively, distributed relatively evenly across the low- and mid-bands. The tighter caps on the low-bands provides more protection to the widely utilised frequencies, whereas the looser mid-band cap places heavily utilised assets at greater risk. Under the proposed cap, Swisscom could potentially acquire an additional 2×30MHz of mid-band FDD spectrum. Given that its existing mid-band FDD spectrum is only 64% utilised, this additional spectrum is clearly not required and would risk taking it away from Salt, which has utilisation of 88%, thereby exacerbating inefficiencies in the market.

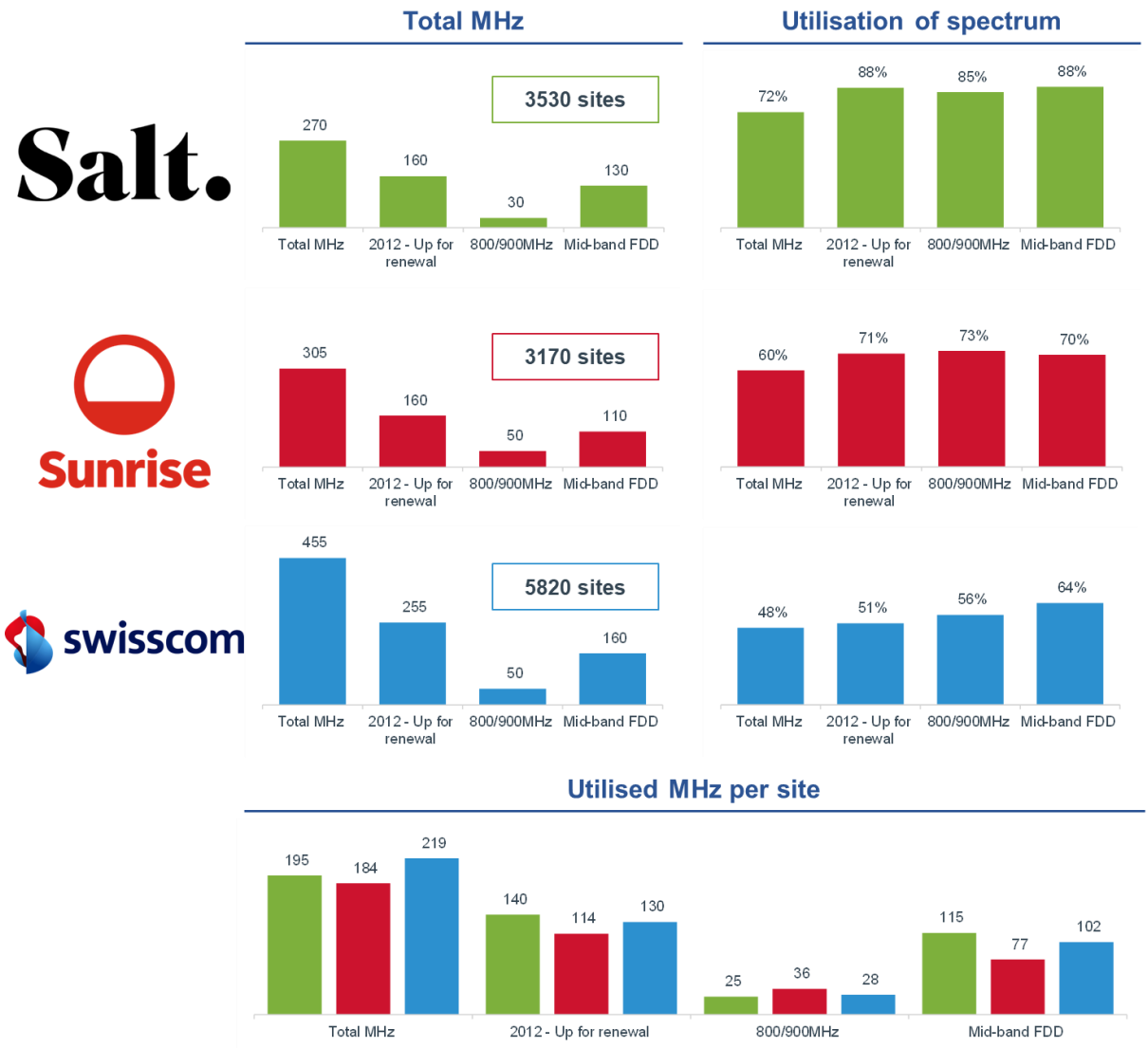
Introducing spectrum caps in a renewal auction that could take away currently (heavily) utilised spectrum assets from operators creates a significant business risk and concerns on the competitiveness of players in the market which should be avoided whenever possible. Salt therefore urges ComCom to tighten the caps, particularly on the FDD mid-bands, to prevent the risk of spectrum hoarding by Swisscom.

As shown in Figure 15 below, an analysis of the average MHz deployed per site reveals that despite Swisscom having 95 MHz more spectrum up for renewal, its current utilisation of spectrum, subject to the upcoming award (130MHz), is 10MHz lower than Salt's (140MHz) and only 16 MHz higher than Sunrise's (114MHz).

[21] Carte Antenne Suisse, '*https://carteantennesuisse.ch/carte-interactive-antennes-suisse/*'

This further highlights the risk that an overly loose mid-band FDD cap could result in Salt losing widely deployed and heavily utilised spectrum in favour of Swisscom which is extremely unlikely to utilise the spectrum more efficiently than Salt given the current utilisation levels.

Figure 15: Utilised spectrum across the macro grids of the MNOs [Source: Carte Antenne Suisse[21]]



3.3.3 European benchmarks for spectrum caps

European benchmarks, presented in Figure 16 (total spectrum caps), Figure 17 (low-band spectrum caps) and Figure 18 (mid-band spectrum caps), clearly demonstrate that our proposed caps (40-43%) are consistent with regulatory practice across Europe, where the average spectrum cap in a three-player market is approximately 40%. By contrast, ComCom's proposed total cap of 50% and the effective mid-band cap of 54% are significantly out of line with these benchmarks.

Figure 16: European benchmark of total spectrum caps (FDD / FDD + TDD) [Source: Aetha]

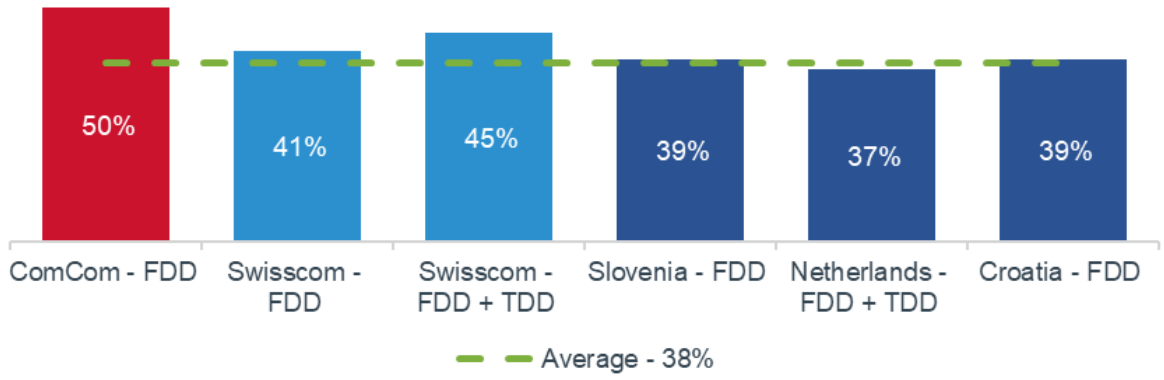


Figure 17: European benchmark of low band total spectrum caps [Source: Aetha]

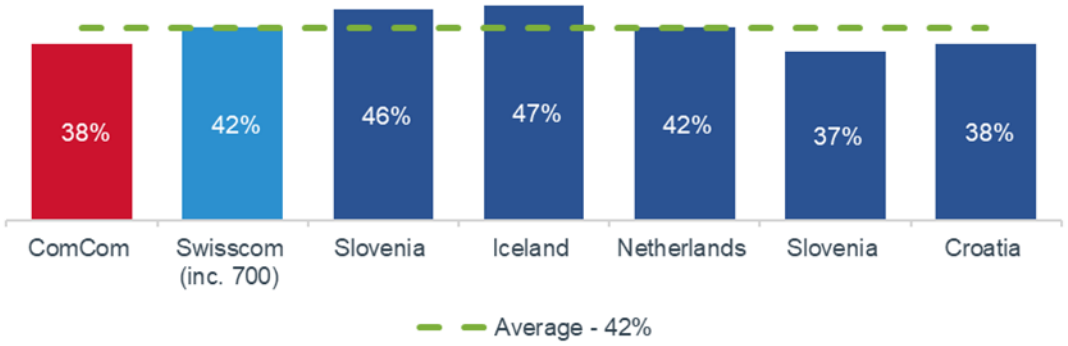
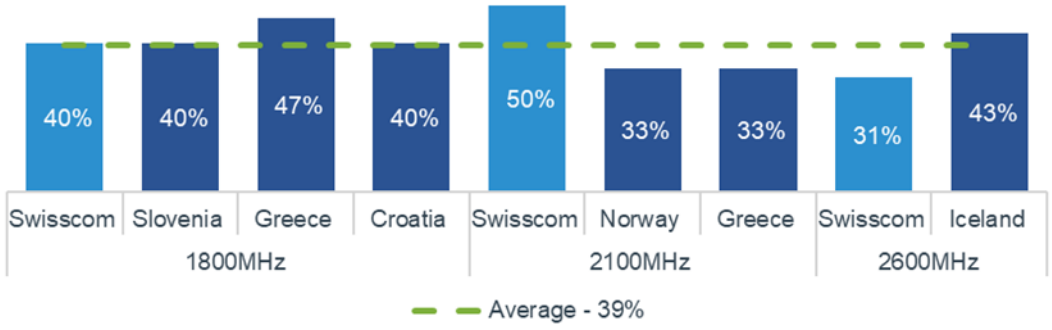


Figure 18: European benchmark of mid-band FDD spectrum caps [Source: Aetha]



Proposed spectrum caps for the upcoming auction

The caps set by ComCom should be sufficiently flexible to not predetermine an auction outcome, whilst preventing spectrum hoarding from operators who do not require the assets. However, the previous sections have shown that there are significant risks with the current mid-band caps, which may limit a smaller player to the spectrum reserved in Stage 1 of the auction.

In contrast to ComCom's proposal, Salt would not recommend a low-band cap but rather a cap across the most valuable bands in this auction – ranging from 800MHz to 2100MHz. Together with the Stage 1 portfolios, this will allow each operator to trade off bands, enabling the acquisition of larger blocks within a single band (in line with the growing opportunities for larger carriers with 5G & 6G and the resulting efficiencies in terms of network operation) in exchange for (potentially) removing or reducing interest in another band.

As a result, Salt instead proposes the following spectrum caps that would ensure that at least three operators can secure critical mass of spectrum and would avoid extremely asymmetric outcomes:

- 2×85MHz (43%) across the 800/900/1800/2100MHz
- 2×105MHz (40%) across all FDD bands in the auction.

These caps will provide bidders with the flexibility to switch between FDD bands depending on the valuations and auction dynamics whilst limiting the total holdings to prevent inefficient outcomes.

3.4 Two-stage auction and Stage 1 portfolios

In the draft tender rules, ComCom proposes a two-stage auction format. In this format, a portion of the spectrum is offered in the form of three spectrum portfolios before the main auction stage. Any bidder can only bid for one of the portfolios. All remaining spectrum is then sold in individual lots in the second stage.

The currently proposed portfolios for Stage 1 include the following spectrum assets:

- 2 blocks across 800MHz and 900MHz (categories A or B, as chosen by the applicant)
- 1 block in 2100MHz (category D)
- 2 blocks in each of the 1800MHz and 2600MHz FDD (categories C and E).

Strong rationale for two-stage auction

First of all, Salt supports ComCom's approach of a two-stage auction. This auction is exclusively focused on renewing licences for spectrum in existing bands. As such, it is fundamentally different from auctions for 'new' spectrum. One key aspect of this auction should be to provide operators with the certainty to maintain sufficient spectrum assets to continue operations in the Swiss market. The existing operators have invested billions of Swiss Francs into their respective networks over the last decades. In Salt's view, it is essential for this auction to allow for key spectrum assets to be renewed with near certainty to ensure that investors can continue to confidently invest in the Swiss mobile market. An outcome where one of the operators loses access to most / all of its renewal spectrum would have disastrous consequences for the Swiss mobile market as it would lead to further market concentration, would risk millions of investments going to waste and could lead to higher prices and lower quality of service for Swiss consumers.

Rational approach to low band portfolios for Stage 1

Salt also supports ComCom's proposed composition of the low-band portion of the Stage 1 portfolios. ComCom proposes that each MNO can define 2 blocks across Categories A or B that it would like to renew, which effectively guarantees a 2×10MHz carrier, which is crucial for cell edge and deep indoor traffic. We also agree that the portfolios should exclude the 700MHz holdings as this would discriminate against Salt in favour of Sunrise. In the 2019 award, Salt and Sunrise were forced to accept painful spectrum reductions at high prices across all spectrum bands, not just the low bands, in reaction to Swisscom's aggressive bidding (including 700MHz, 1500MHz, 3500MHz). By only reflecting the resulting disadvantageous position of one bidder (in this case, Sunrise) in the low bands, whilst ignoring the decisions made by Salt in the mid bands (in this case, 1500MHz and 3500MHz) would be highly discriminatory. Therefore, this auction should not be used to balance out any asymmetries in the low bands from past auctions – it should focus on giving a fair share of spectrum to all bidders across the spectrum bands available in this award.

Significant risks with mid-band portfolios in Stage 1

However, Salt has strong concerns about the proposed mid-band portfolios in Stage 1. Compared to the sub-1GHz bands, larger carrier sizes are required in the mid bands to provide sufficient capacity and resulting high-quality mobile network services. ComCom's proposal for the mid bands only guarantees small holdings in each FDD band, i.e. 2×5MHz of 2100MHz or 2×10MHz in the other FDD mid bands. Furthermore, ComCom's proposal only ensures that each operator can renew 2×25MHz of their current holdings, which equate to 37% of all available FDD mid bands – this is in contrast to nearly 50% of the low bands being reserved in Stage 1 as per ComCom's current proposal.

Holding such small spectrum quantities, especially 2×5MHz in the 2100MHz, would lead to inefficient spectrum deployments. Salt does not believe this meets the objective set out by ComCom to 'guarantee a minimum allocation of frequencies' as with such small carrier sizes, operators would have to make large investments into radio equipment, antennas and supporting licences, whilst only realising small capacity gains. Furthermore, operators in Switzerland also face high building permit costs compared to other countries when adjusting band deployments on mobile base stations. Having access to many small carriers would further increase the network deployment costs and create a high investment burden, which may ultimately have to be passed on to consumers. In contrast, increasing the amount of spectrum available in Stage 1 and therefore increasing the amount of frequencies renewed by each operator can reduce the cost burden of new permits.

As a result, operators typically deploy 2×20MHz where these are available. This is the standardised maximum carrier bandwidth for 4G and provides an optimal trade-off between provided capacity and required investment. This can also be seen in today's deployments, where each operator currently utilises at least 2×20MHz carriers in the FDD mid bands, wherever they hold sufficient spectrum assets.

At the same time, it is unclear whether operators necessarily require larger carriers. This can be seen in Swisscom's current deployments of the 1800MHz and 2100MHz bands, where Swisscom holds 2×30MHz and on the majority of its sites utilises a 2×20MHz carrier, leaving 2×10MHz of each band largely unused.

Recommended approach to mid-band portfolios

As a result of the above concerns, Salt strongly believes that ComCom needs to align its approach in the mid bands to match the proposed low-band approach for Stage 1.

More specifically, we recommend the following:

- Expand the Stage 1 mid-band portfolios to 8 blocks of 2×5MHz – this would allow each operator to ensure renewing 2 blocks of 2×20MHz in the FDD mid bands. All operators utilise such large blocks across multiple bands on their networks today, meaning that this approach would ensure continuation of services.
- Allow each operator to pick these 8 blocks flexibly across Categories C – E, subject to the spectrum held in their current portfolios, to avoid excess demand in any single band. Alternatively, ComCom could also define a maximum of 4 blocks of 2×5MHz per Category, such that any excess demand is avoided, as per the approach chosen in the low bands.

The proposal would reserve 2×40MHz per operator, which equates to ~60% of the available spectrum in the FDD mid bands. Whilst this may appear to be a large amount, we note that there is significant international precedent from European renewal auctions in other countries for such a decision:

- In Belgium (2022) 38% of the total 130MHz of low band spectrum was reserved for Stage 1 compared to 70% of the total 270MHz in the 1800/2100MHz bands was reserved
- In the Netherlands (2024) 180MHz out of 300MHz (60%) of 3.5GHz was reserved
- In Denmark (2021) 50% of the 2100MHz (60MHz) and 62% of the 3.5GHz (240MHz) was reserved in a Stage 1 portfolio.

ComCom's proposal in the low bands allows the MNOs to choose the band (800MHz vs 900MHz) that is of most value to be allocated as part of the portfolio. A similar approach should be taken in the mid-bands to allow for larger carrier sizes to be guaranteed. As discussed above, this should be within the framework of existing holdings as the goal is to ensure the continuation of services

Furthermore, by allowing each operator to renew a large part of their existing mid-band portfolios, this would allow the auction in Stage 2 to focus on the marginal lots of spectrum, which would enable each operator to more clearly define the marginal quantities of their portfolios, rather than having to compete unnecessarily for business-critical spectrum assets.

Figure 19:
Proposed Stage 1 portfolios and implications on Stage 2 auction

Band	Number of lots	Stage 1 portfolios	Auctioned in Stage 2
800/900MHz	13	6	7
Mid band FDD	41	24	17
2600MHz TDD	2	0	2
Total	**56**	**30**	**26**

3.5 Premium of Stage 1 portfolio

ComCom proposes a minimum price for the three Stage 1 portfolios of CHF129.36 million. This represents a 20% premium compared to the reserve prices set for the second stage of the auction. Salt strongly opposes the proposed premium on Stage 1 spectrum and recommends that ComCom sets the reserve prices of Stage 1 at the same level as Stage 2.

Stage 1 is an auction, not a direct assignment, therefore not warranting a premium price

The purpose of Stage 1 portfolios should be to ensure that all MNOs acquire a minimum viable portfolio of spectrum in order to guarantee the continuation of existing services and not be to maximise revenue. The first stage is also an auction and not a direct assignment and there is thus no rationale for setting a premium on Stage 1 portfolios – if there is a fourth bidder the prices of the portfolios can rise above the reserve price.

As previously shown in Section 3.2, even without the 20% premium, the high total proposed reserve price of CHF855 million is above the benchmark value of recent European auction final prices – which comes out at CHF743 million. Therefore, a premium pushes the reserve prices further out of line with the benchmark value and is not justified.

Differentiated pricing between Stages 1 & 2 leads to complexities and false incentives

Furthermore, awarding the same spectrum across two stages at different reserve prices leads to complications for bidders during the auction. In particular, bidders face unnecessary complex decision of whether to apply for a Stage 1 portfolio if reserve prices are 20% cheaper in Stage 2.

The creation of such incentives to potentially hide demand in Stage 1 for an expectation of a lower price in Stage 2 should be avoided. It forces operators to potentially 'gamble' on the Stage 1 outcome, especially in light of the high reserve prices, as discussed above. Such incentives should not be given to operators and may lead to imperfect decision-making with poor consequences for the Swiss mobile market.

Charging a premium in Stage 1 is not aligned with international benchmarks

Finally, a premium on Stage 1 spectrum is not aligned with international best practice. For example, in the following recent European auctions no premium was applied for spectrum reserved in Stage 1:

- **Belgium 2022:** 50MHz of low-band and 190MHz of mid-band FDD was reserved in Stage 1
- **Denmark 2021:** 60MHz of 2100MHz and 240MHz of 3.5GHz was reserved in Stage 1
- **Denmark 2019:** 60MHz of either 700MHz or 900MHz and 40MHz of 2300MHz was reserved in Stage 1.

3.6 Auction format

Salt **supports ComCom's proposal** to conduct the upcoming spectrum auction using **the Clock auction format with exit bids**. This format is well-established, tested and understood from an international perspective. The Clock auction format is among the most widely used auction formats when awarding spectrum with more than 25% of global auctions in the last 10 years utilising this format.

One of the primary advantages of the Clock auction is the **ease of switching**. In a Clock auction, bidders can freely switch their demand in every round, which is particularly important in this auction due to the large number of spectrum bands available and the substitutability between different bands. The 800MHz and 900MHz are effectively perfect substitutes today – both bands will be used for 4G & 5G and have effectively similar handset support. Similarly, all of the FDD mid bands will be strongly substitutable – operators desiring larger spectrum packages in a specific band (after having secured the minimum required bandwidth of 20MHz in Stage 1), should have the ability to focus their demand on a smaller number of bands to optimise portfolios and network deployments and should be able to switch between the bands reacting to price changes without having retained demand in one of the bands that would go against this optimisation of portfolios. This is in contrast to other formats, such as the SMRA, which restrict switching as bidders need to wait to be outbid in order to make a switch.

The Clock auction also **eliminates aggregation risks**. These risks arise in other formats (such as the SMRA) as bidders could win a subset of the package they are bidding for. In contrast, in a Clock auction bidders are only exposed to the package they are currently bidding for and can only win a subset of this package if they actively place a bid on a smaller package in a future round.

Furthermore, as a **pay-as-bid auction**, bidders have clearer information during the auction itself on the potential prices that will need to pay for the spectrum. This facilitates the internal process of making bid decisions throughout the auction.

The Clock auction is also **a relatively quick format** as prices increase on all lots in a band (if there is excess demand). Therefore, there is limited risk that the auction will run longer than necessary. In contrast, other auction formats, such as the SMRA, can considerably extend the duration of the auction – for example, the German auction in 2019 lasted around 500 rounds, while Portugal's 2021 auction extended to approximately 1,700 rounds.

An alternative to the clock auction could be the use of a more complicated auction formats (such as the CCA, which was used in 2012). However, there are numerous disadvantages to the CCA and other associated formats, which have led to the these effectively being replaced by formats like the clock auction, for reasons such as:

- **Complexity** – the formats are difficult to understand by stakeholders and there can be significant uncertainty on the amount of spectrum acquired / price paid at every stage of the auction.
- **Asymmetric outcomes** – Numerous CCAs have led to auction outcomes, especially on spectrum prices, that are at times difficult to understand for external parties and created a risk of legal action after the auction.
- **Budget management** – budget-constrained bidders face challenges in their bidding decisions as the amount they bid may be very different to the amount they have to pay. This may lead to inefficient outcomes.

Therefore, as outlined above, we support ComCom's proposal to use a Clock auction format with exit bids for the upcoming auction.

3.7 Payment terms

ComCom proposes that payment for the awarded spectrum licences is to be made within 30 days of the licence coming into force. This places an unfair advantage on larger bidders that can more easily raise the required funds. As previously highlighted in Section 3.2, renewing existing holdings at reserve price would constitute a payment of 23% of annual cashflows for Swisscom. In contrast this would require a payment of 171% of annual cashflows for Salt. This would put extreme pressure on Salt's finances and might require re-financing.

Due to the high prices in 2012, ComCom allowed the MNOs to pay in 3 instalments over four years. The proposed total reserve price is only 8% lower than the final price in 2012 therefore, the final prices will be similar to 2012 – potentially even higher – meaning MNOs will be due to pay similarly high prices. Salt therefore proposes that instead the payments are made in equal annual instalments over the licence duration.

Allowing operators to pay for the spectrum in annual instalments reduce the financial strain on operators and encourages more fair competition between the smaller operators (e.g. Salt) and larger operators (e.g. Swisscom). There are many international precedents of licences being paid in annual instalments as shown in Figure 20 below.

Figure 20: Benchmarks of payment terms

Country	Year	Bands	Payment terms
Hong Kong	2025	2600MHz	11 equal annual instalments
Saudi Arabia	2024	Multiband	15 annual instalments, Year 1 – 10%, followed by 14 equal annual instalments
Croatia	2023	Multiband	10 equal annual instalments
Belgium	2022	Multiband	20 equal annual instalments
France	2020	3.5GHz	200MHz (65% of total spectrum) – 15 equal annual instalments 110MHz (35% of total spectrum) – 4 equal annual instalments
Italy	2018	Multiband	5 annual instalments, >70% to be paid in Year 5
Spain	2018	3.5GHz	20 annual instalments

Salt recognises that payments in annual instalments will require a change in the current ordinance in Article 24 of the Regulation on the use of radio spectrum[22] (VNF) which requires payment in a single payment immediately after the concession is granted. However, this has been achieved in other countries and after the 2012 auction, given the auction is still over 18 months away we hope a suitable solution can be achieved.

3.8 Round parameters

3.8.1 Price increment

ComCom's current proposal is for a maximum price increment of 15% between rounds. Salt appreciates that ComCom is likely going to use a lower bid increment for the majority of the auction. However, Salt's view is that a 15% price increment is excessive and we instead propose a maximum price increment of 10%. Furthermore, we strongly encourage ComCom to use a 5% bid increment for the majority of the auction.

The Clock auction format is a relatively quick format (unlike, for example, the classic SMRA) with respect to price increases. For example, a 10% price increment would lead to prices more than doubling at the end of Day 1[23] and prices increasing by a factor of about 10× in 3 days of bidding. As a result, a 10% price increment is more than sufficient for the auction to conclude within a reasonably short period of time.

With a 15% bid increment per round, prices could rise by a factor of nearly 2.7× at the end of Day 1, >8× at the end of Day 2 and 25× at the end of Day 3.

Such a high increment would make it more difficult for bidders to manage their bid decisions throughout the auction. Furthermore, high increments are not optimal as they risk overshooting (i.e. not finding the equilibrium point between supply and demand).

In addition, a 15% increment is not consistent with international approaches, where regulators typically cap the bid increment at 5-10% (in some auction formats, bidders might have the option to bid above

[22] Article 24 of the Regulation on the use of radio spectrum, available at: https://www.fedlex.admin.ch/eli/cc/2020/1024/de#art_24

[23] Assuming 8 rounds per day

these levels but are not forced to). As evident from Figure 21 below, none of the benchmarked regulators set the price increment above 10%.

Figure 21: Benchmark price increments

Country	Year	Bands	Price increment
Slovakia	2025	Multiband	5% of reserve price
Netherlands	2024	3.5GHz	10%
Croatia	2023	Multiband	10% of reserve price
Belgium	2022	Multiband	10%
Montenegro	2021	Multiband	5% of reserve price
Slovakia	2022	3.5GHz	5%
Spain	2021	3.5GHz	5%
Luxembourg	2020	Multiband	10%
Germany	2019	Multiband	10%

3.8.2 Round duration

Section 3.2.1 of the draft tender rules states that:

'The timing of the clock rounds is at the auctioneer's discretion. In particular, the auctioneer is free to set the duration of rounds and the interval between rounds […]. It is not expected, however, that a clock round will last less than 15 minutes or more than two hours.'

Salt appreciates that ComCom is unlikely to apply the extreme ends of the proposed round duration range (15 minutes or 2 hours). However, Salt considers that the proposed range could create practical challenges for the bidders during the auction process.

First of all, a minimum round duration of 15 minutes is insufficient for bidders to make well-informed decisions. In a Clock auction, bidders are required to make bid decisions in every round and for all lots in the auction. Unlike other formats such as the Classic SMRA or SMRA Clock-hybrid, there are no rounds where bid decisions are trivial or involve only a limited number of lots. Therefore, bidders must have sufficient time to interpret price changes, assess aggregate demand and coordinate their internal decision-making process.

At the same time, a maximum duration of 2 hours is excessive and could lead to unnecessary delays in the overall auction process, without materially improving decision quality.

Therefore, **Salt proposes** for ComCom to limit the round duration range between **30 minutes and 1 hour**. Slat believes that this range strikes the right balance between allowing sufficient time for decision making and maintaining an appropriate speed of the auction

3.9 Assignment Phase

3.9.1 Overall format of the Assignment Phase

Following the completion of the spectrum portfolio bidding phase and the main bidding phase, auctions with frequency-generic lots require a process of assigning winning bidders of abstract lots to specific

frequencies within each band. ComCom is proposing a second-price, sealed-bid combinatorial auction to determine the position of winning lots within each band, whilst guaranteeing contiguous lots.

Salt welcomes the ComCom's proposal to utilise a second-price assignment auction. This auction format is the most widely-used format to assign specific frequencies to bidders that win generic lots in the main phase of the auction. As it is a well-known and tested format, bidders should have confidence in the bidding process and the expected results.

The second-price assignment rule allows bidders to express their full value for each position in the each of the bands. This increases the likelihood of the assignment phase resulting in an efficient outcome.

We believe that the assignment process proposed by ComCom is favourable in comparison to other assignment mechanisms, such as a first-price mechanism. The first-price auction format introduces a large degree of chance to the outcome and therefore carries substantial risk of producing an inefficient outcome:

- In a first-price, sealed-bid auction, a bidder is incentivised to bid below its value (or 'shade' its bid) in order to minimise the amount it pays, therefore reducing the risk of overpayment
- However, the more a bidder shades its bid, the higher the risk of the bid losing to a competitor's bid
- This leads to an element of chance as bidders are trying to estimate the competitors' valuations and second-guessing competitors' shading strategy in order to optimise their own bids
- Of course, a bidder can mitigate the risk of losing by increasing its bid, this then risks unnecessarily overpaying for the spectrum.

Therefore, as discussed above, Salt welcomes ComCom's proposal for a second-price assignment auction format.

3.9.2 Assignment Phase sequencing

In the draft tender rules ComCom is proposing to conduct the Assignment Phase **simultaneously** for all bands.

As discussed in Section 3.9.1 above, we support ComCom's overall proposal to use a second-price sealed bid process in the Assignment Phase as this is an appropriate and well-established format for allocating specific frequencies.

However, we believe that conducting the Assignment Phase **sequentially** across bands is necessary to ensure an efficient and fair outcome.

Auctioning specific positions in different bands sequentially is required as preferences for positions in certain bands may depend on positions in other bands, for example gaining specific combinations of positions in bands can create Passive Intermodulation (PIM) issues.

If bands are auctioned simultaneously bidders have no ability to express preferences through their bids to avoid such problematic combinations. This is because a bidder's optimal position in Band A might depend on its position in Band B – a simultaneous process does not allow bidders to manage these interdependencies effectively.

In addition, a simultaneous Assignment Phase creates significant disadvantages for budget-constraint bidders. In this format, a budget-constraint bidder would face a difficult trade-off:

- it can choose to bid below its full valuation in some or all of the bands to remain within budget or

- it may take the risk of bidding above budget with the expectation of a lower final price

While these risks still exist if all bands are auctioned sequentially, a budget-constraint bidder can more easily optimise its budget between different Assignment Phase rounds (as when bidding in a later round, it will know the results of the previous rounds).

Furthermore, international experience demonstrates that sequential Assignment Phases are well-suited to complex multiband auctions. Several multiband spectrum auctions have used sequential Assignment Phases, including (but not limited to): Slovakia (2025), Croatia (2023), Montenegro (2022), Slovenia (2021) and Australia (2018)

Therefore, we **recommend that in the Assignment Phase ComCom auctions all bands sequentially** in order to ease the bidding decisions of auction participants and to maximise the likelihood of an efficient auction outcome

3.10 Bank guarantee

In the draft tender rules, ComCom is proposing that bidders provide bank guarantees equal to **100% of the minimum bid** during the Application Stage and maintain a bank guarantee of **50% of their highest bid** during the auction.

Salt **supports ComCom's overall proposal** to set these levels for the bank guarantee requirements. We consider these thresholds to be appropriate and consistent with international best practices.

In our view, the proposed bank guarantees are essential to reduce the risk of frivolous or speculative bidding. Requiring bidders to commit meaningful financial security prior to and during the auction ensures that only serious participants with genuine intent enter the process. This safeguards the integrity and competitiveness of the auction.

Furthermore, the proposed bank guarantees materially reduce the risk of post-auction default. When bidders are required to maintain significant financial commitments before and during the auction, they are incentivised to meet their payment after the auction. We note that instances of bidders defaulting on payments after auctions are rare, but they do occur. For example, in 2016, Jasmine Mobile defaulted on its payment for the 900 MHz spectrum in Thailand and in 2017 Atheeb defaulted on its payment for 700MHz and 1800MHz in Saudi Arabia.

International examples of bank guarantees / deposits also support ComCom's proposal. For example, there are a number of recent spectrum auctions that have adopted similar or stricter financial security requirements, including UK (2025), Austria (2024) and Canada (2023 and 2019). These examples demonstrate that ComCom's proposed approach is well aligned with global practices and provides an appropriate safeguard against both pre-auction and post-auction risks.

In summary, as outlined above, Salt supports ComCom's proposed financial guarantee levels as they ensure that only serious participants take part in the process, reduce the risks of post-auction default and are aligned with international best practices.

4. Clarification questions regarding the draft tender document

In this section, we include some clarification questions on the draft tender rules.

4.1 Assignment Phase bidding options

Section 5.2.2 of the draft tender documents provides information about the bidding options available to bidders during the Assignment Phase:

- *'The number of frequency blocks corresponds to the number of abstract frequency blocks won by the respective bidder'*
- *'The frequency assignment is contiguous'*
- The frequency assignment options *'does not exclude the possibility of making a contiguous frequency assignments to all other bidders'*

The above description could be interpreted in one of two ways:

- **Option 1** (Figure 22)**:** bidders will be allowed to bid for all possible permutations removing the identity of competitors and removing any resulting duplicate options from the list of all permutations
- **Option 2** (Figure 23)**:** bidders will be allowed to bid for all possible permutations

Option 1 and Option 2 are described in the illustrative examples in Figure 22 and Figure 23 below for an Assignment Phase in the 800MHz with three winners of spectrum during the spectrum portfolio and the main bidding phase. In Option 1, bidders are allowed to place three bids (based on the six permutations from Option 2 but removing the identity of competitor positions) and in Option 2, bidders are allowed to place six bids (on all six permutations).

Figure 22: Illustrative example of Assignment Phase bid options in 800MHz (Option 1)

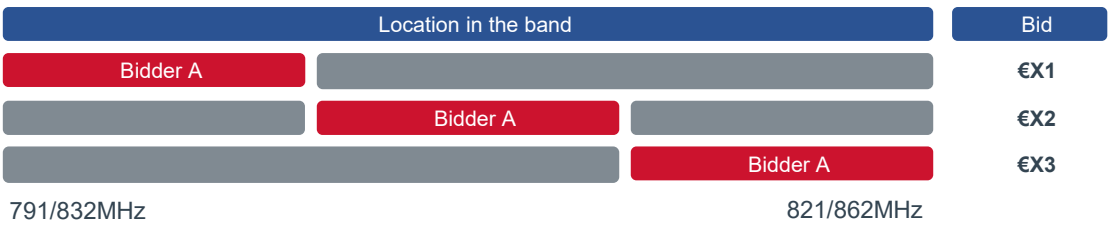
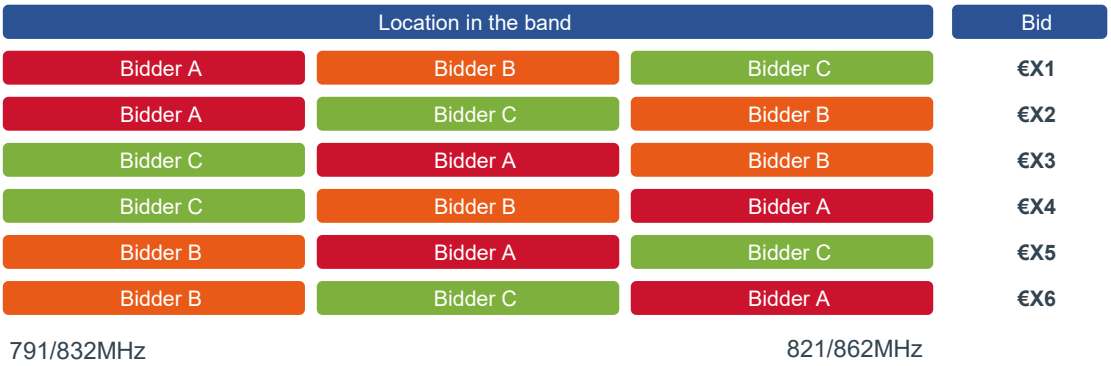


Figure 23: Illustrative example of Assignment Phase bid options in 800MHz (Option 2)



Could ComCom clarify which of the above options it intends to use for the Assignment Phase?

We would recommend that ComCom uses Option 1 above, as it is the standard approach used for Assignment Phases globally.

Option 1 is the preferable format for the Assignment Phase because it encourages bidders to bid truthfully and decreases the scope for strategic bidding. Option 2 is not preferred as it creates opportunities for a bidder / bidders to bid strategically on certain permutations and force another bidder into specific unwanted position in a band.

Therefore, as discussed above, we recommend that ComCom uses Option 1 (bidding options to be generated by removing the identity of competitor positions). This would maximise the likelihood of an efficient outcome of the Assignment Phase.

4.2 Activity rules

Section 4.7.1 of the draft tender document states that:

'In each round, the activity associated with a bid must not exceed the bidder's eligibility at the start of the round by more than 5%, measured in terms of eligibility points rounded up to the next whole number, except in the first round where the activity must not exceed the bidder's initial eligibility'

Could ComCom confirm our understanding of the above rules in the following illustrative example below:

- A bidder applies for 1 lot of 2600MHz[24] – therefore the maximum it can bid for in Round 1 is 1 lot of 2600MHz
- In Round 2, the bidder can switch its demand of 1 lot to 1800MHz as its maximum permitted activity is 2 points (maximum activity is equal to 1.05 points, rounded up to the next whole number)
  - despite submitting a bid for 2 activity points, the bidder's eligibility remains at 1 point
- In Round 3, the bidder can submit an exit bid in the 1800MHz
  - the bidder's eligibility for the next round will be zero
- In Round 4, the bidder can't submit any bids at the clock price as its maximum activity is 0 points
  - in fact, the only action the bidder can do in the auction going forward is to carry forward or cancel its exit bid in the 1800MHz

[24] 2600MHz – 1 activity point, 1800MHz – 2 activity points

Figure 24: Activity rule: Illustrative example

Round	Clock price	1800MHz	2600MHz	Maximum activity	Activity	Eligibility at end of round
1	100	0	1	1	1	1
2	110	1	0	2[25]	2	1
3	120	0 (clock) 1@115 (exit)	0	2	2	0
4	130	1@115 (exit)	0	0	0	0

4.3 Exit bids

Section 4.6.6 of the draft tender documents state that:

*'Exit bids in a category are automatically carried forward unless the bidder **increases** its clock demand in that lot category above the base of the exit bid'*

Could ComCom confirm that the above text should state *'unless the bidder **increases or decreases** its clock demand in that lot category'?*

For example, in ComCom's illustrative example in Section 6.2 *'Variation: missing exit bids',* the bidder's exit bid of 2+2@110 in Category C is not applied at the end of the auction as the bidder has later **decreased** its demand to a base of 0.

4.4 Spectrum caps and exit bids

Section 4.5.3 of the draft tender documents state that:

'The bidder is free to specify its clock demand in each category, subject to […] complying with the spectrum caps'

In addition, Section 4.8.3 states that at the end of the auction, exit bids will only be accepted if *'in combination with the bidder's clock bid and any previously accepted exit bids, comply with the applicable spectrum caps'.*

In addition, the same section of the rules states*: 'if there are multiple exit bids from one bidder that could potentially be accepted, the auctioneer identifies the combination of exit bids that generates the greatest total revenue'*

Could ComCom confirm our understanding of the above two rules using the illustrative example in Figure 25 below:

- A bidder has secured a spectrum portfolio in Stage 1 – therefore its spectrum cap for the main bidding stage is 3 lots across Category A and B
- In Round 1, the bidder submits a bid for 2 lots in Category A and 1 lot in Category B

[25] 1×1.05, rounded up to the next whole number

- In Round 2, the bidder reduces its demand in Category A to 1 lot and submits and exit bid. In Category B, the bidder increases its demand to 2 lots[26]
  - this scenario is possible as the bidder's clock activity (3 lots) is compliant with the low-band spectrum cap, even though the bidder's clock + exit activity (4 lots) is above the spectrum cap
- In Round 3, the bidder is reducing its demand in Category B to 1 lot and submits an exit bid
- If the auction finishes at the end of Round 3 and there is excess supply in both Category A and B with no exit bids from competitors, the bidder will be allocated 1 lot in Category A and 2 lots in Category B:
  - the bidder is allocated its clock demand in Category A and Category B (1 lot in each category)
  - allocating the two exit bids in Category A and Category B would breach the spectrum cap
  - the auctioneer selects the exit bid that generates the highest revenue (in Category B)

Figure 25: Spectrum caps and exit bids: Illustrative example

Round	Clock price	A	B	A+B (Clock activity)	A+B (Exit activity)
1	100	2	1	3	0
2	110	1 (clock) 1@105 (exit)	2	3	1
3	120	1 (clock) 1@105 (exit)	1 (clock) 1@115 (exit)	2	2

4.5 ComCom's illustrative examples

ComCom's illustrative examples in Section 6.1 and 6.2 assume that each bidder applies for 2 lots in Category D. Could ComCom confirm that the examples are incorrect under the current draft tender document rules as bidders are allowed to only apply for 1 lot in Category D?

[26] We note that this scenario is only possible if the bidder also reduces its clock demand in Category C, D, E or F

Annex A Additional material

A.1 Market details

Figure 26: Reported operating revenue from services on mobile networks (CHFm) [Source: Bakom[27]]

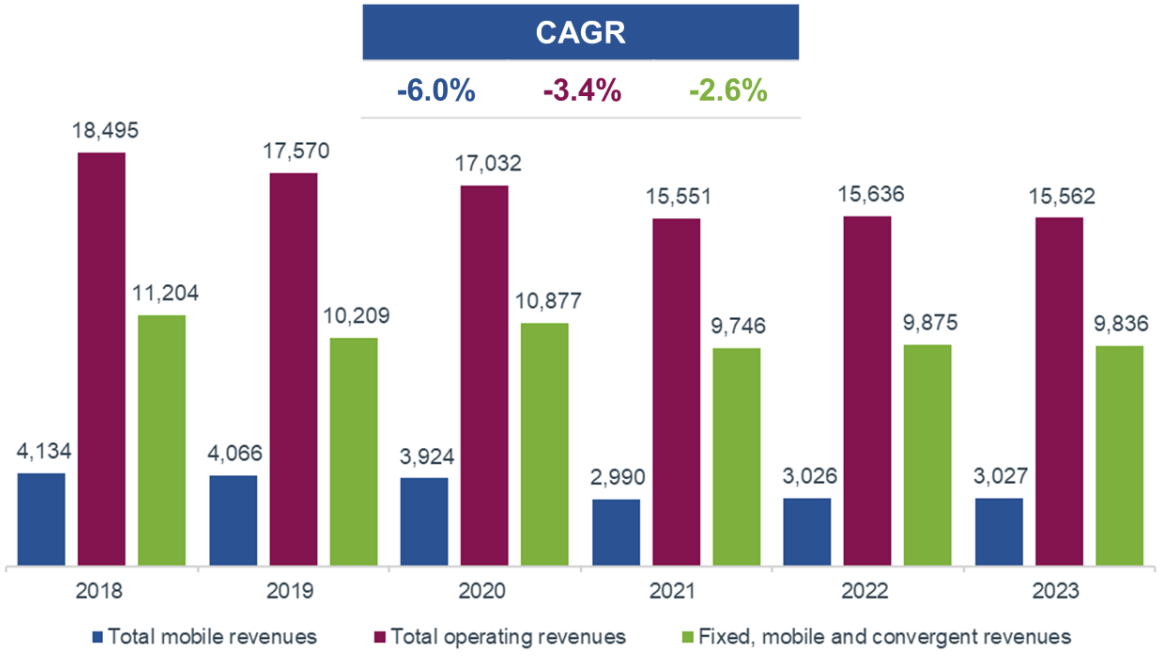
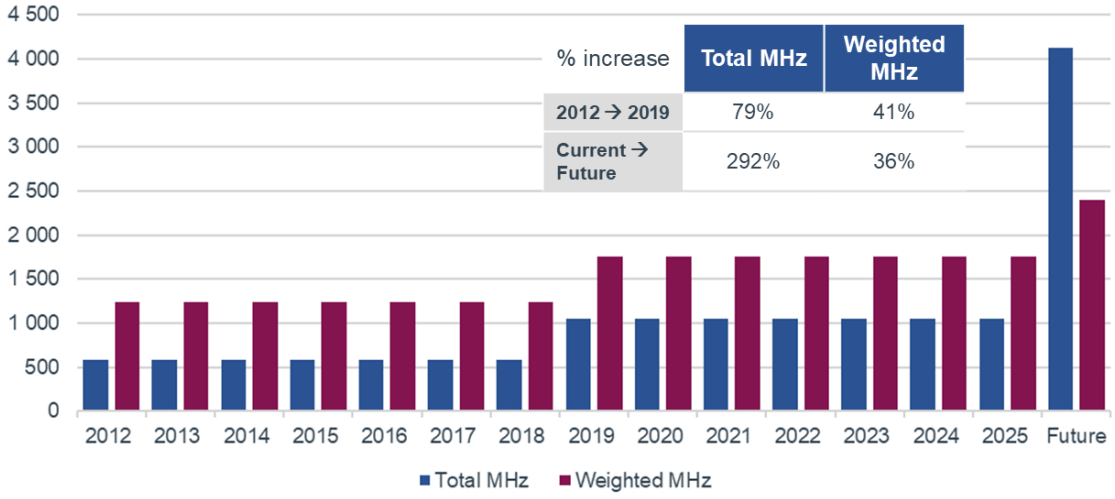
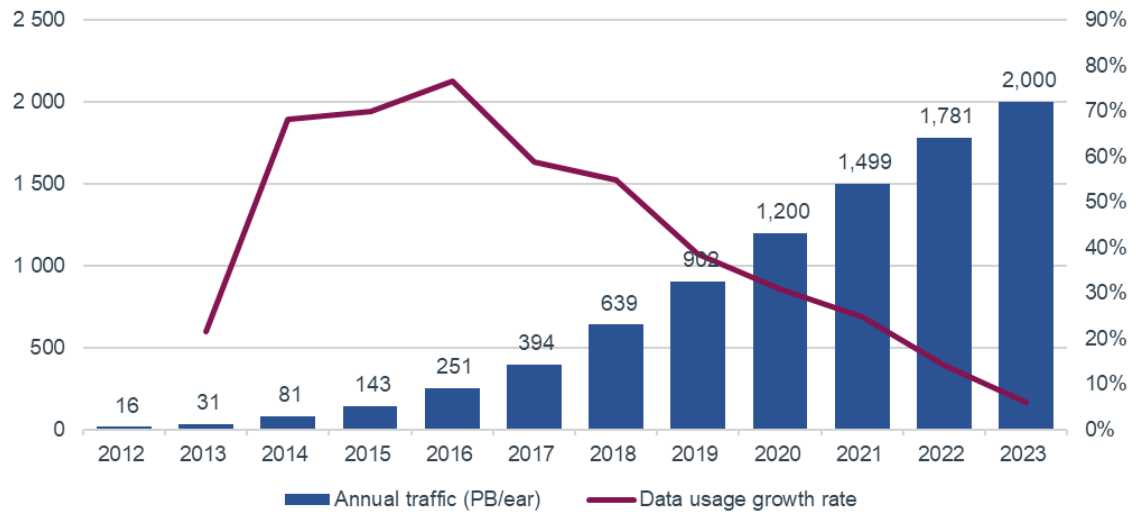


Figure 27: Total spectrum supply in the Swiss market (total MHz) [Source: Aetha]



[27] https://www.bakom.admin.ch/en/financial-results-on-3112

Figure 28: Annual mobile traffic and average usage per subscriber growth [Source: Bakom[28]]



A.2 Reserve price assumptions for 2012 auction

The lots available in the 2012 auction had varying durations and usable bandwidths. In order to compare 2012 reserve prices to the current lots we have assumed the effective reserve prices as detailed in Figure 29 below.

Figure 29: 2012 auction effective reserve prices used

	# Lots	Reserve price (CHFm)	Total reserve price (CHFm)
800MHz	6	21.3	128
900MHz	7	21.3	149
1800MHz	15	7.1	107
2100MHz	12	8.3	100
2600MHz FDD	14	8.3	116
2600MHz TDD	3	12.45	37
Total cost			**637**

A.3 Tables for weighted spectrum quantity used in reserve price calculations

Not all spectrum bands are valued equally – which is as seen in the reserve prices previously set by ComCom. The tables below detail the weightings used when calculating the proportion of spectrum available in the market in the reserve price adjustment calculation.

[28] https://www.bakom.admin.ch/en/transmission-and-broadband-internet-services-on-mobile-connections

Figure 30: 2012 proportion of spectrum

	Weighted MHz	Cumulative MHz	2012 bands %
2012	1245	1245	100%
2019	510	1755	71%
Future	320[29]	2075	60%

Figure 31: Weighted spectrum in the market since the 2012 auction

	2012			2019			Future		
	Total MHz	Weighting	Weighted MHz	Total MHz	Weighting	Weighted MHz	Total MHz	Weighting	Weighted MHz
600MHz							70	4	280
700MHz				60	4	240	60	4	240
700MHz SDL				15	2	30	15	2	30
800MHz	60	4	240	60	4	240	60	4	240
900MHz	70	4	280	70	4	280	70	4	280
1400MHz				90	2	180	90	2	180
1800MHz	150	2	300	150	2	300	150	2	300
2100MHz	120	2	240	120	2	240	120	2	240
2600MHz FDD	140	1	140	140	1	140	140	1	140
2600MHz TDD	45	1	45	45	1	45	45	1	45
3.5GHz				300	0.2	60	300	0.2	60
6GHz							600	0.2	120
mmWave							2400	0.1	240
Total Weighted MHz			**1245**			**1755**			**2395**

[29] Adjusted by a factor of 50% to account for delay in future spectrum availability