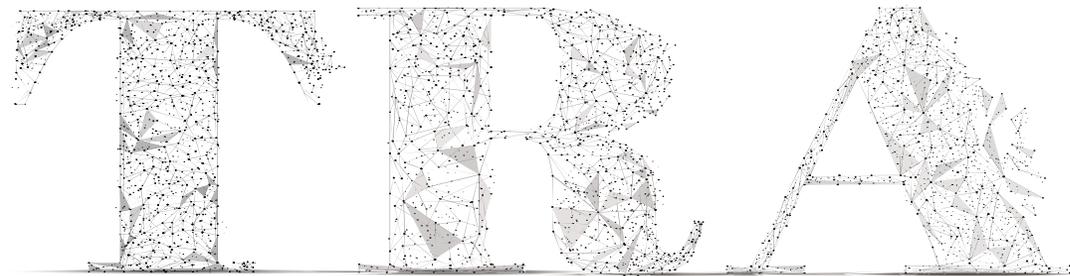


Bahrain Telecom Pricing International Benchmarking

July 2018



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REPORT OVERVIEW

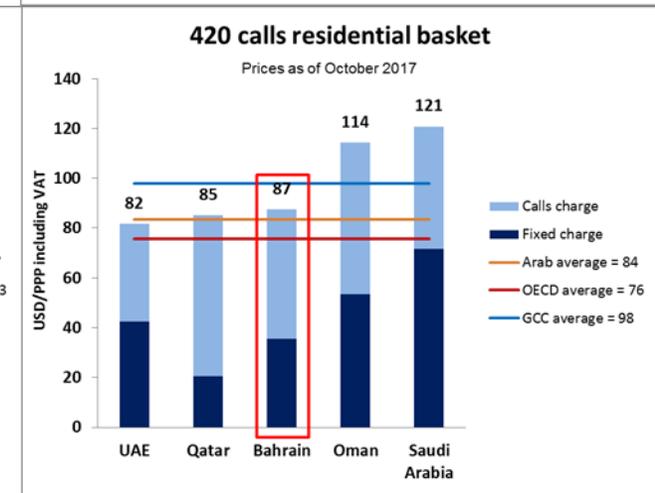
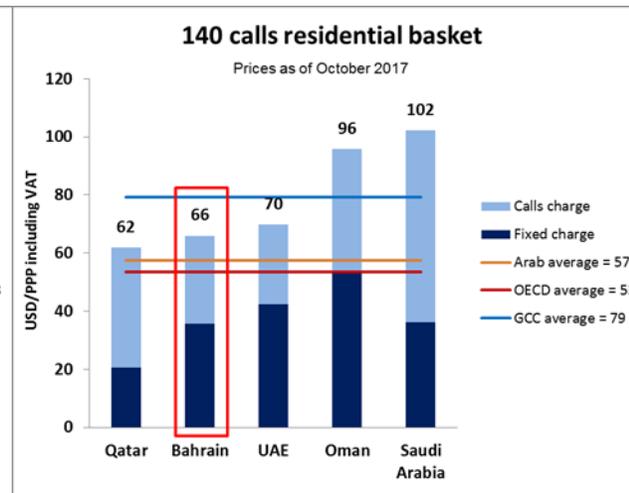
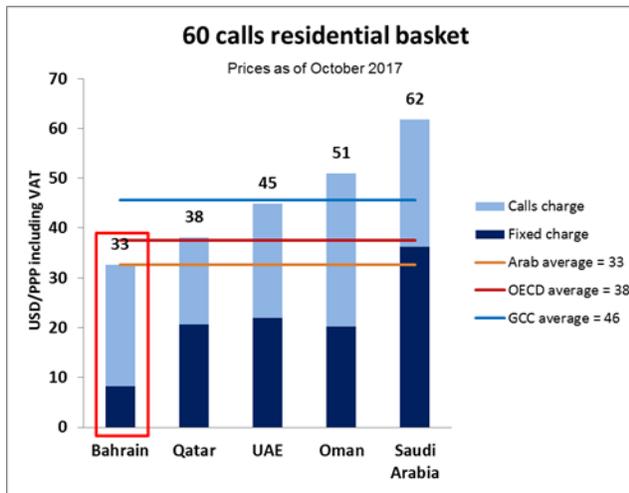
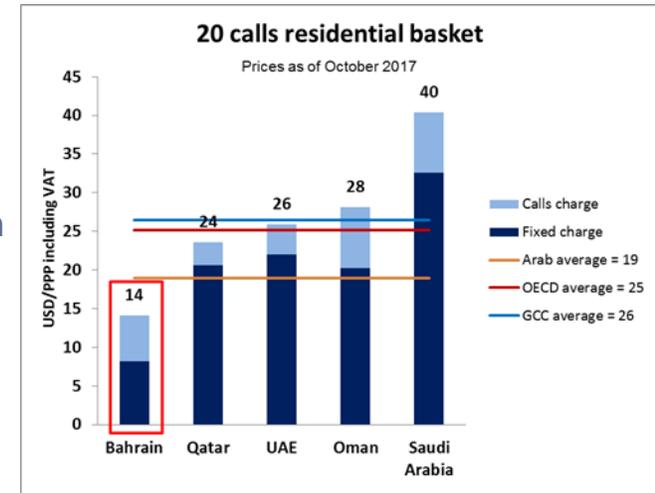
- This report focusses specifically on Bahrain retail prices for telecommunications services in compared to GCC countries*, Arab average and OECD average.
- The services covered in this report are the same as the services covered in the main AREGNET report, namely:
 - Fixed voice (PSTN)
 - Mobile telephony
 - Fixed Broadband
 - Mobile Broadband
 - Leased lines
- In addition, aggregate analyses have been included, to illustrate the likely total costs faced by consumers and businesses separately who subscribe to a number of communications services. In this analysis, 3 types of user have been defined for consumers; with low usage, medium usage and high usage, and 2 types of user for businesses; medium and high usage.
- All the results contained in the report are derived directly from data from the main AREGNET study, which is based on OECD methodologies, and which uses data gathered in October 2017.
- References to both GCC and Arab averages are included, for comparison. Where relevant the OECD average is also shown
- The results are shown in US\$/PPP, based on exchange rates taken from oanda.com as of 1st October . The PPP conversion uses World Bank “Comparative Price Levels” from 2016.
- An overview of the study methodology, as well as a description of the baskets considered within each service can be found in a separate document**

* Data for Kuwait is only available for mobile services

** AREGNET Price Benchmarking Methodology 2017

PSTN RESIDENTIAL BASKETS

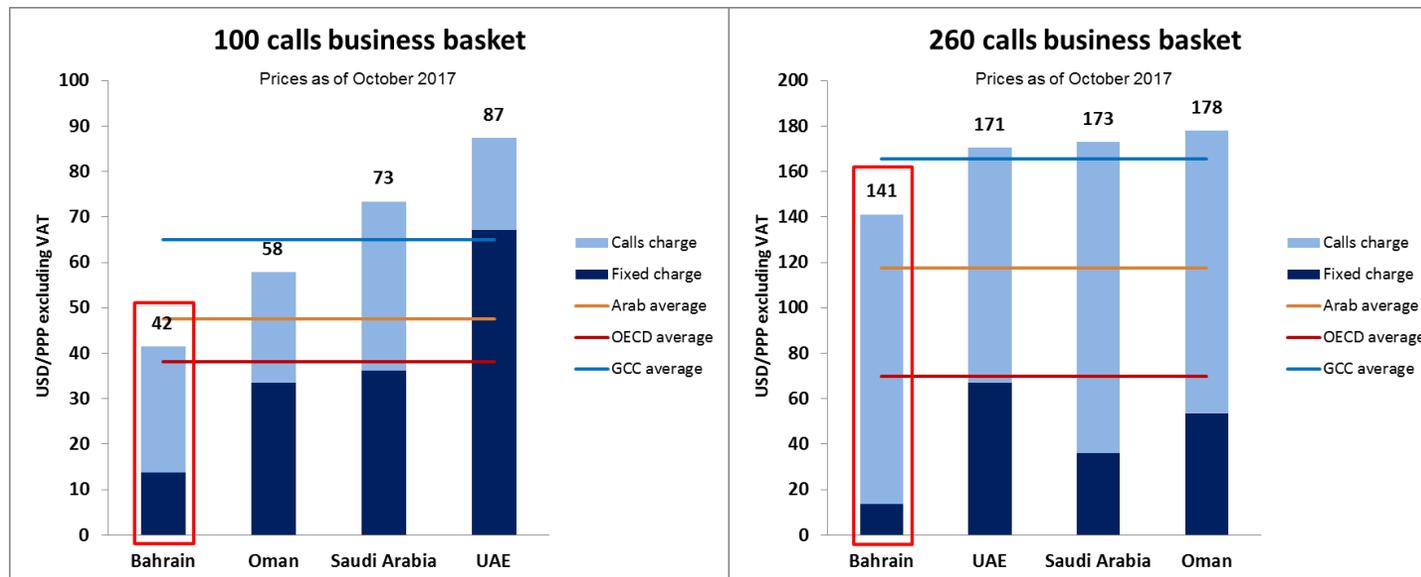
- Bahrain has the lowest fixed charge for residential telephone lines for the lowest two baskets, and has the lowest overall cost. As usage increases, it falls down the ranking slightly, but is still very close in cost to the overall cheapest.
- Bahrain is below the OECD average for the two lowest baskets, and on par with the average for the higher use baskets. It is also significantly lower than the GCC average.
- The Batelco tariff with unlimited on-net calls benefits higher usage baskets. Many of the other GCC countries already have lower or “free” fixed line calls.



As in the main benchmarking report Mauritania is excluded from the Arab average.

PSTN BUSINESS BASKETS

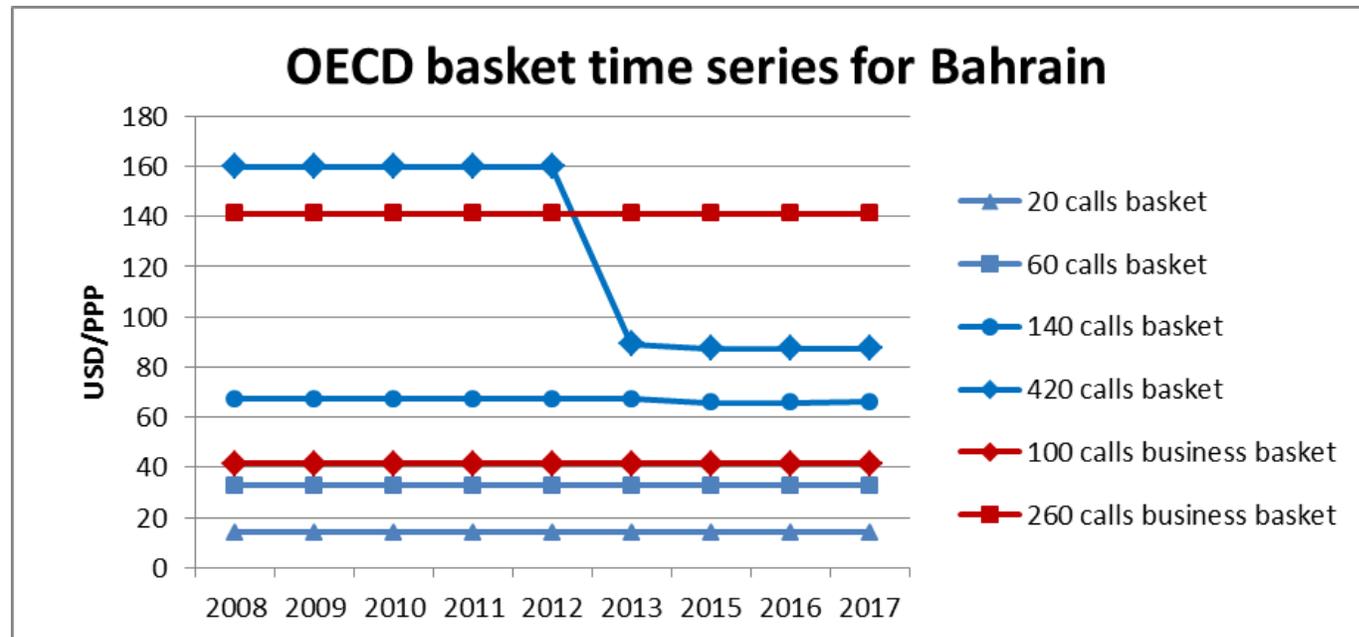
- Bahrain has the lowest fixed charge for business telephone lines, but has relatively high calling charges (especially for domestic fixed-to-fixed calls).
- Bahrain is performing well for both the low usage (100 calls) and high usage (260 calls) basket, with the lowest overall cost.
- Usage charges will escalate much faster with usage in Bahrain than in the other countries, meaning that for usage above approx. 500 calls Bahrain will be more expensive than some of the other countries.
- Business telephony pricing is once again being published in Saudi Arabia



As in the main benchmarking report Mauritania is excluded from the Arab average.

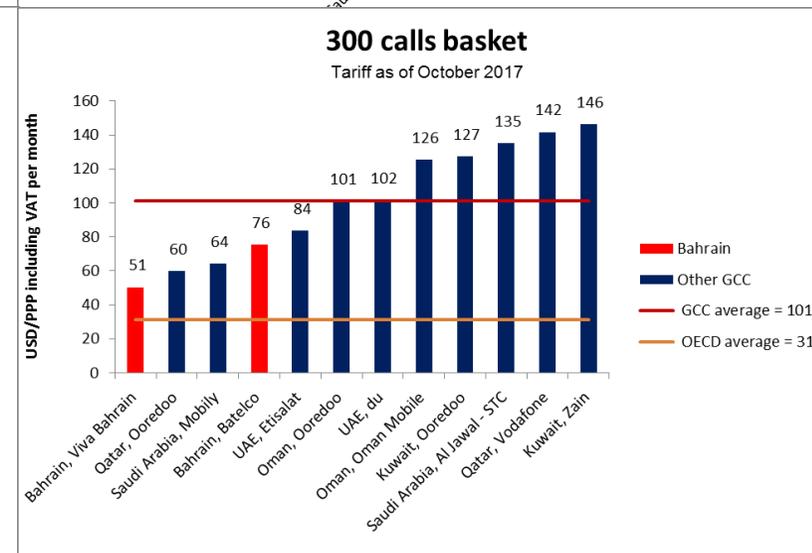
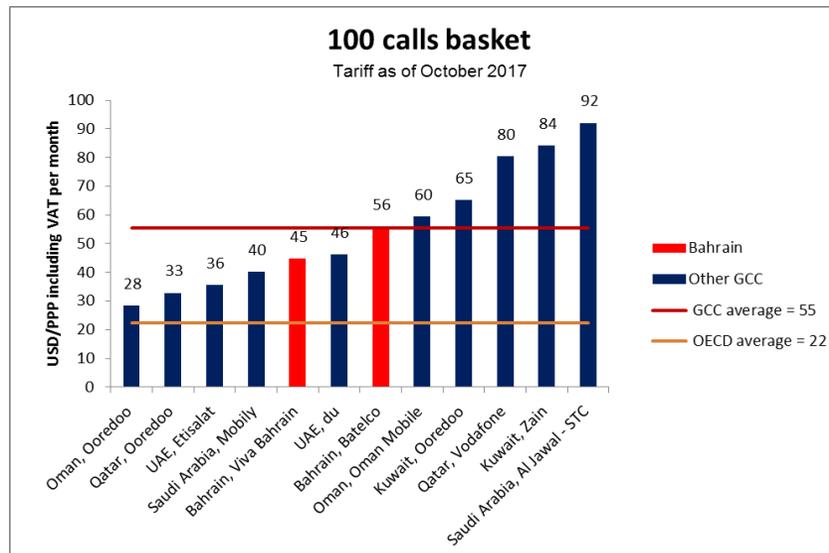
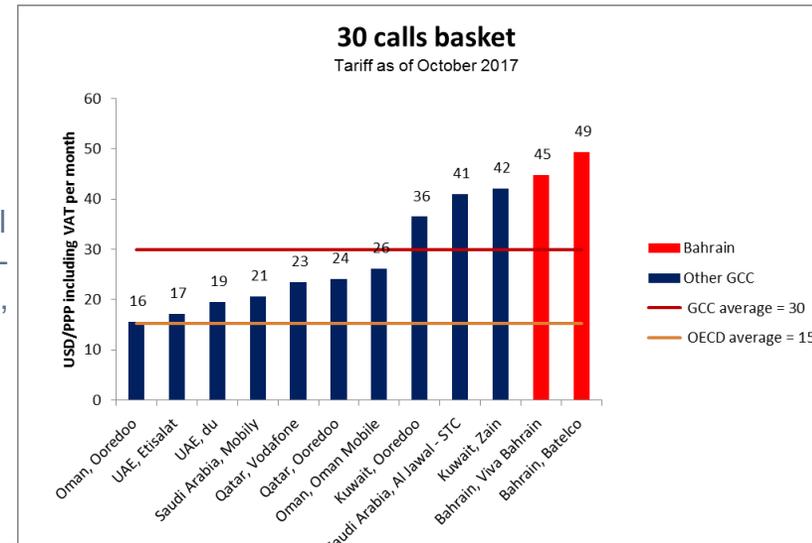
PSTN BASKETS TIME SERIES FOR BAHRAIN

- PSTN pricing in Bahrain has been static since 2008 for most users. The introduction of an unlimited calling option for residential customers has resulted in a sharp fall in costs in 2013 for the high usage residential basket.
- Prices have remained competitive during this time, compared to other GCC countries.



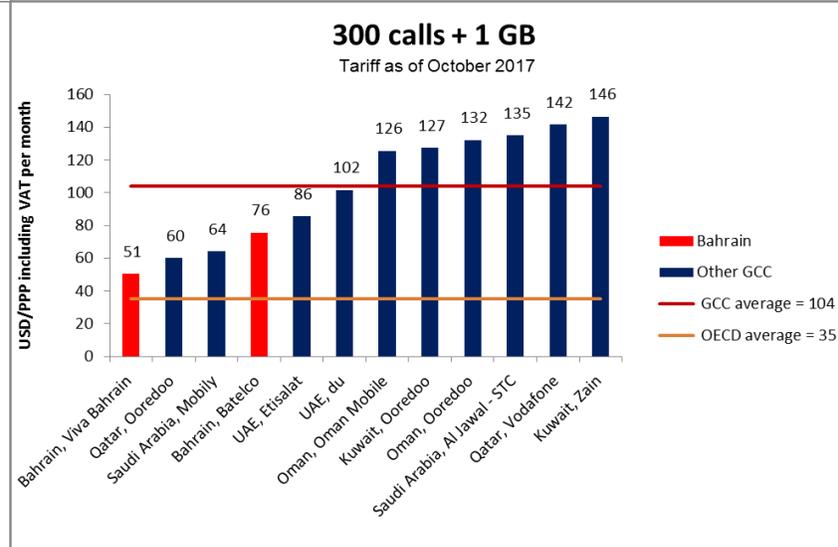
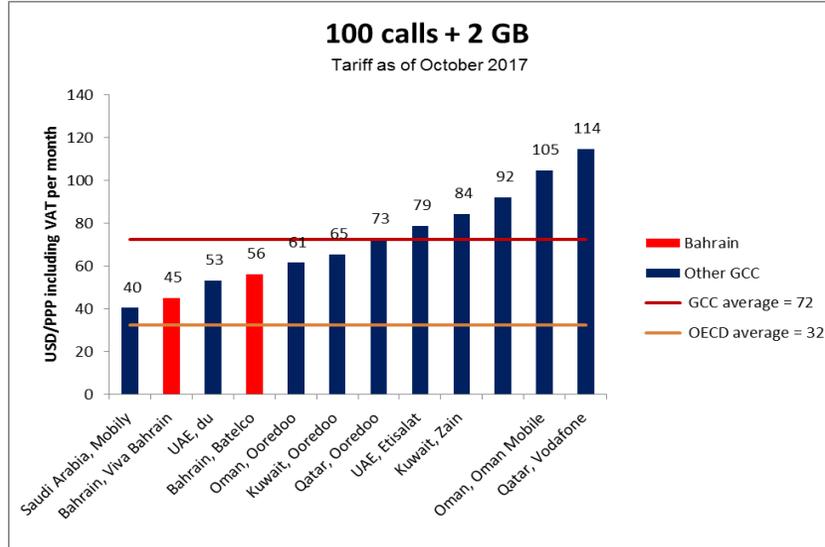
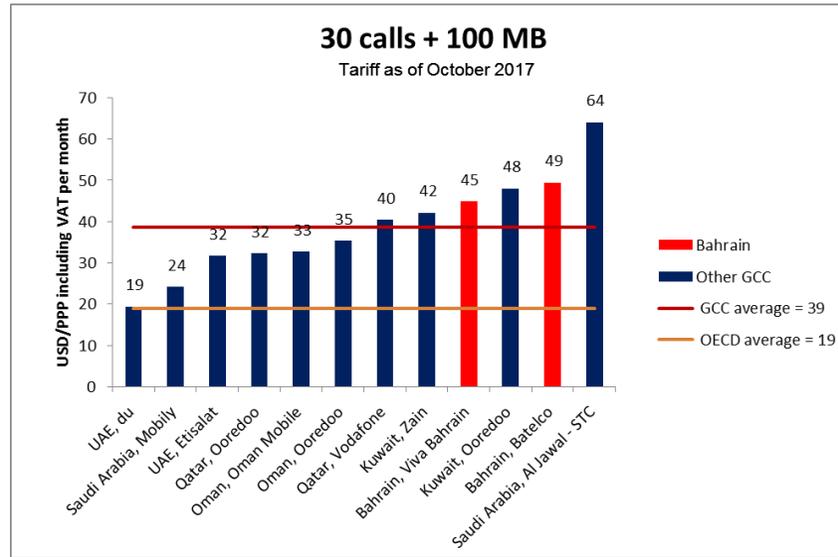
MOBILE BASKETS WITHOUT DATA

- Bahraini operators compare less favourably to the GCC average for lower usage baskets, and for the very low usage basket are the most expensive of the GCC providers. As usage increases, however, the position of Bahrain becomes much more competitive, due to the prevalence of tariffs with higher upfront rental with high call allowances/free calls. At the very highest level (900 calls – not shown), Bahrain once again becomes less competitive, as packages are not geared towards this level usage.
- Bahrain is significantly above the OECD average, for both low and high usage tariffs. A number of GCC countries are closer, at low usage, but as usage increases, the position relative to the OECD average worsens.



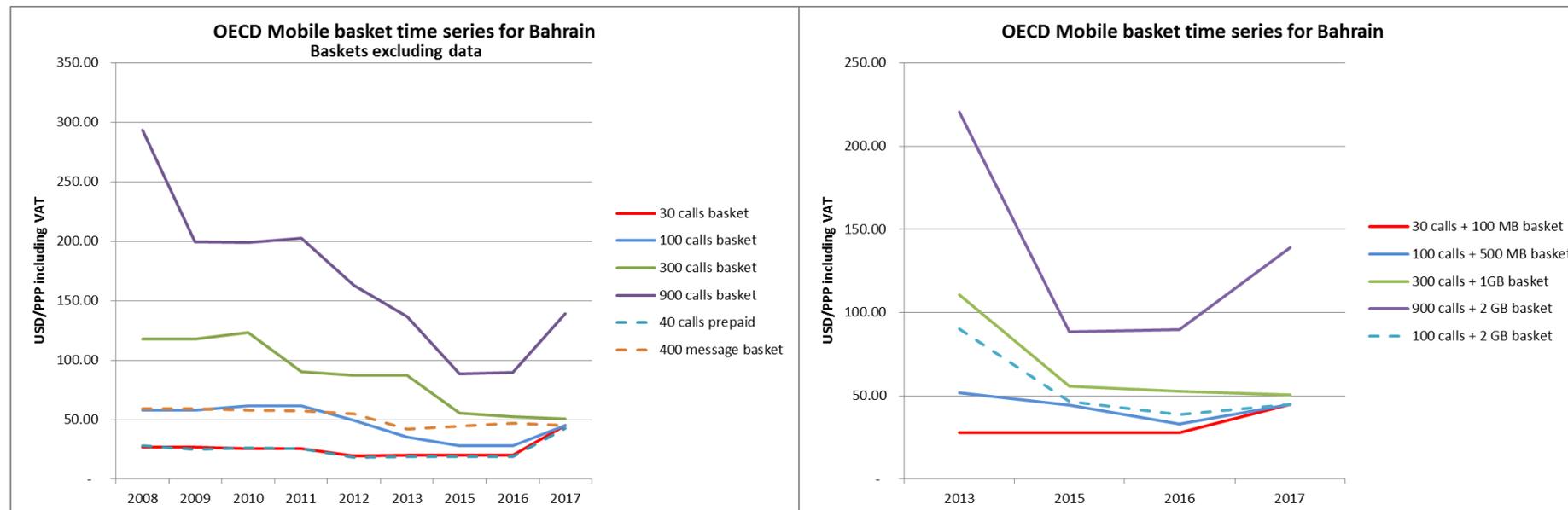
MOBILE BASKETS WITH DATA

- For lower data (and call) usage, Bahraini operators are typically much less competitive across the GCC, and are much higher than both the GCC and the OECD averages
- As data usage increases, prices in Bahrain become much more competitive. For the 300 calls+1GB basket, Viva Bahrain is the cheapest operator across the GCC, with a BD8/month plan which includes 10GB data, while Batelco ranks in 4th place. For the 100 calls+2GB basket, the Bahraini operators rank in 2nd and 4th place respectively.
- For lower usage, a small number of GCC operators are on par with the OECD average, but, as usage increases, the OECD is consistently much lower than GCC operator costs.

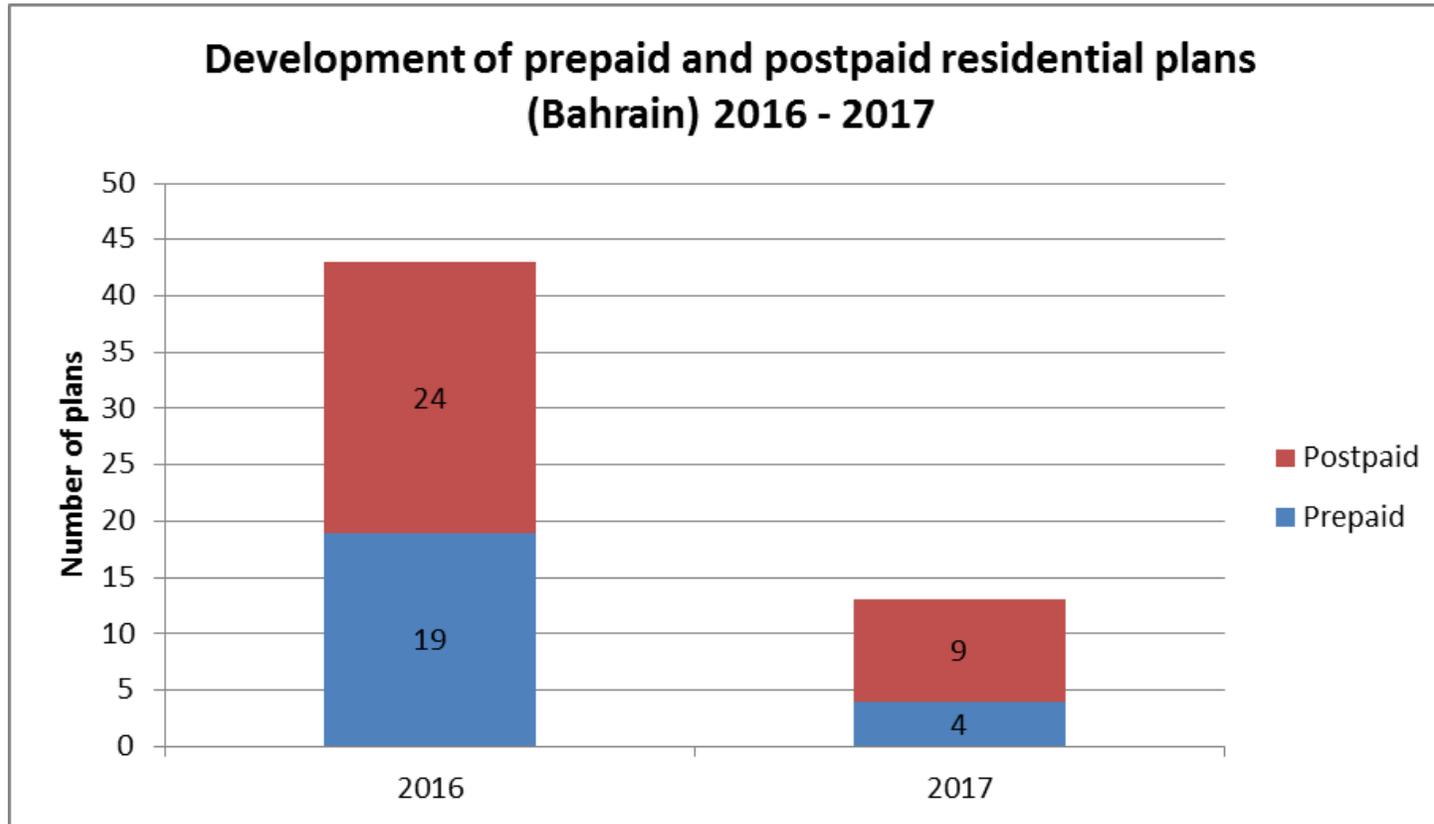


MOBILE BASKETS TIME SERIES FOR BAHRAIN

- In contrast to previous years, mobile prices both including and excluding data have increased over the period 2016 to 2017 for most (although not all) baskets. For plans excluding data, the average increase is 59%, while for plans including data, the average increase is 33%. This is as a result of an overall revision in pricing by the Bahraini operators, with plans much more focused on higher usage, and on plans which include large data allowances.
- For all of the baskets including data, with the exception of the highest use basket (900 calls + 2 GB), the cheapest plan is the same (although for the 300 calls + 1GB, there are some additional overage charges because of the high number of voice minutes in the basket. This illustrates the shift towards higher included allowances, and higher monthly rental.
- Since 2008, mobile costs excluding data have fallen by 6% on average. Mobile costs including data have fallen on average by 19% since 2013 (when data costs first started being tracked).

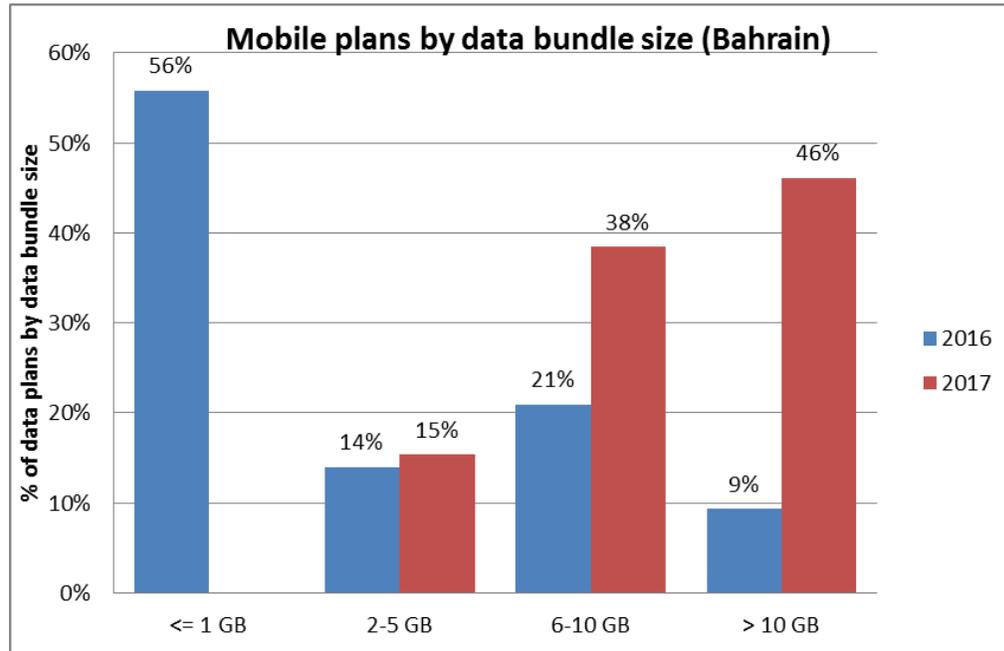


DEVELOPMENT OF MOBILE PLANS IN BAHRAIN (1)



- Over the period 2016 – 2017, the number of mobile plans offered to consumers has declined significantly. In particular, the number of prepaid plans, which would typically be offered to lower users, is very small.
- Even the prepaid plans, which come with a weekly or monthly charge, have a lot of data.
 - 4.4 GB for the weekly pack
 - 6 GB for the monthly pack.

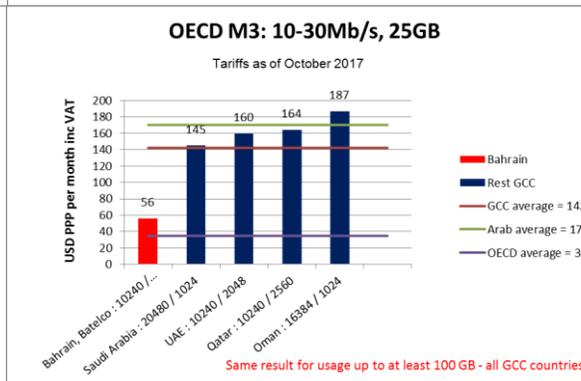
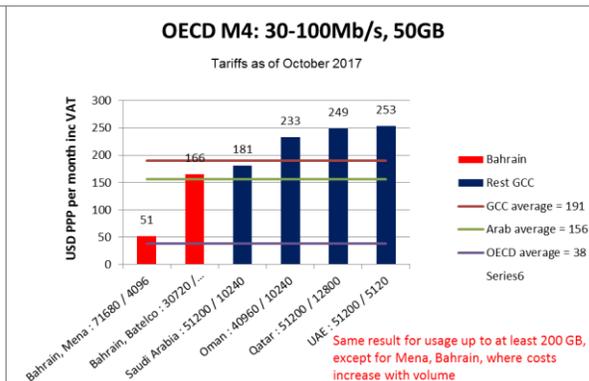
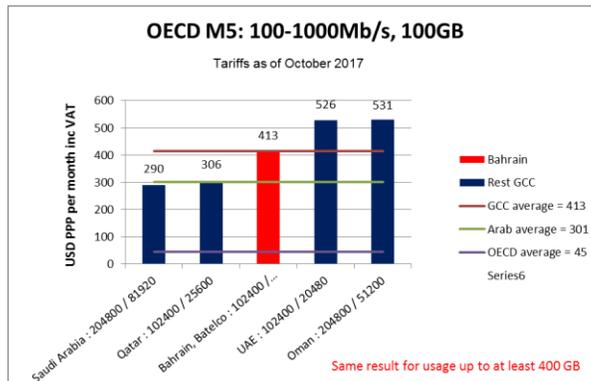
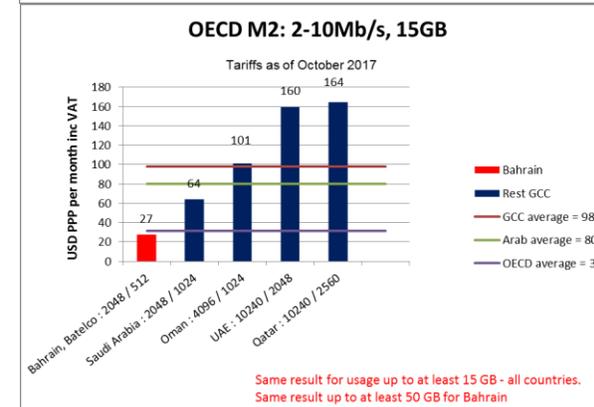
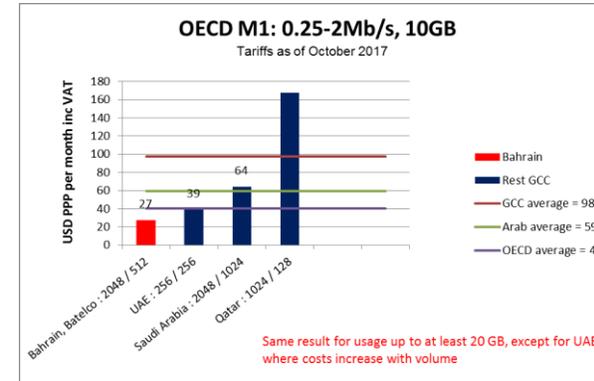
DEVELOPMENT OF MOBILE PLANS IN BAHRAIN (2)



- There has been a significant shift in the amount of data included in mobile plans by the Bahraini providers over the period 2016 – 2017.
- In 2016, over half of all residential plans included <= 1GB data, and plans with higher data allowances, while available, were much less prevalent
- In 2017, there were no plans in the lowest data allowance category. By contrast, the number of plans with data allowances above 10GB/month has grown significantly, and accounts for almost half of all plans.
- This shift has a big impact on costs for users with more modest usage needs, and negatively impacts them.
 - For users who only have very modest requirements, there are no low usage options available from the Bahraini providers, as was the case in 2016
- This results in a significant increase in costs for such users, as they will have to subscribe to packages that have much more than they need, in terms of allowance.
- However, the average monthly mobile data use per subscriber in Bahrain at the end of 2016 was 7.8GB, and this increased by 16% over 2017, giving an estimated mobile data use per subscriber of 9GB. This suggests that many users will require packages with larger data allowances. As the graph shows, 84% of plans have data allowances over 5GB.
- Average monthly voice minutes have also declined over the period 2016-2017, by 15% (hence why baskets with an extremely high number of minutes are also very expensive in Bahrain, as this is not a typical usage profile).

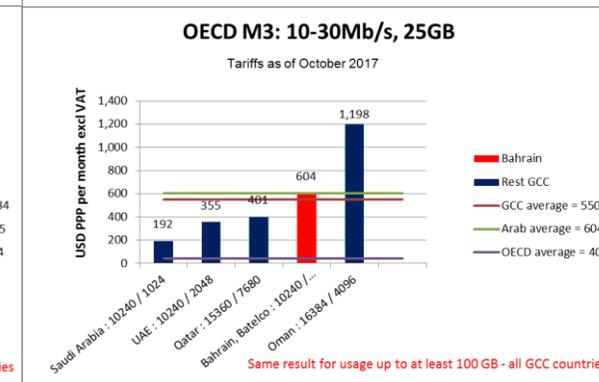
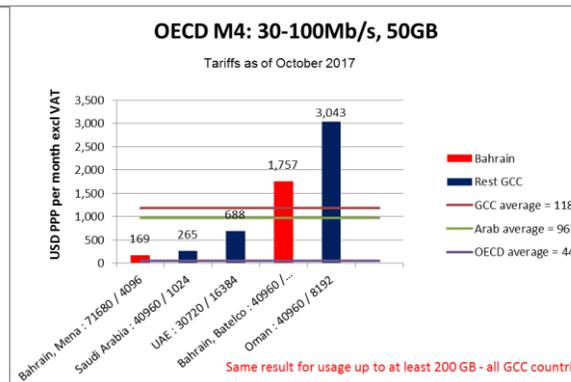
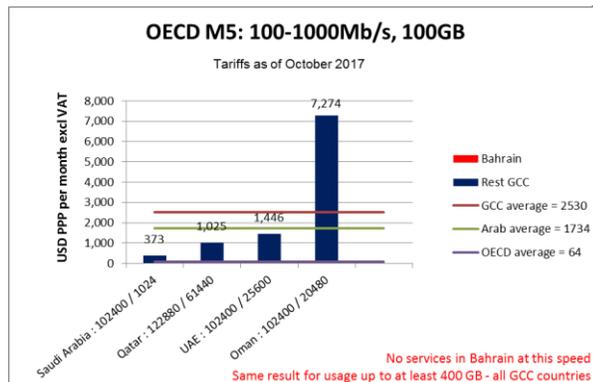
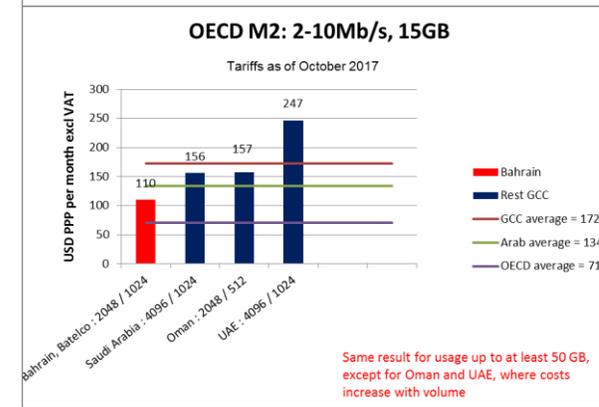
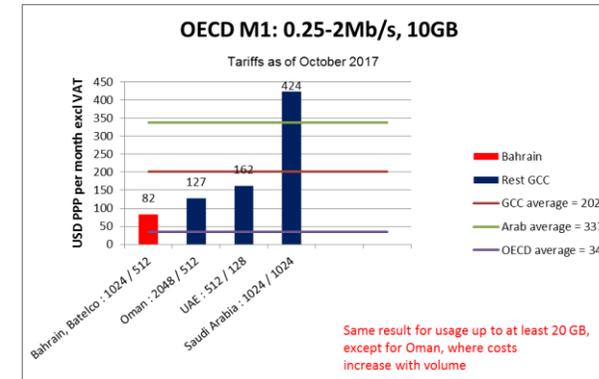
FIXED BROADBAND BASKETS, RESIDENTIAL TARIFFS

- With the exception of the highest speed basket analysed (100-1000 Mb/s), Bahrain has the lowest cost services. The position of Bahrain varies, depending on the speed of the basket, and the provider.
- Mena in Bahrain offers an LTE-based, high speed service at low cost, in the range 30-100 Mb/s. Batelco has a similarly priced offer but at a lower speed (in the speed range 10 - 30 Mb/s). For higher speed services, the cost of Batelco rises.
- The OECD average is generally lower than both the GCC and Arab averages, particularly for the high speed basket
- The results shown, including average results are for medium usage
- OECD Medium baskets are used (M1-M5), with increasing speed and usage requirements.



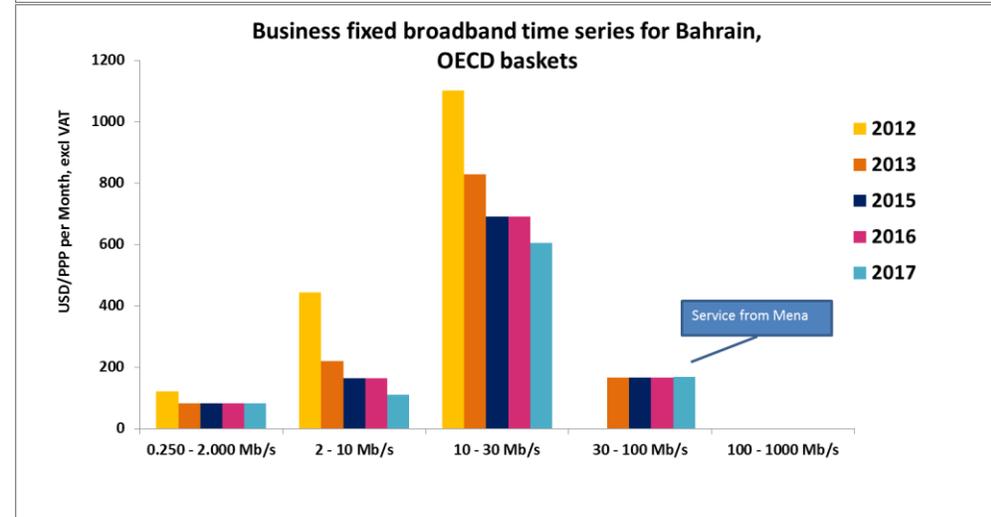
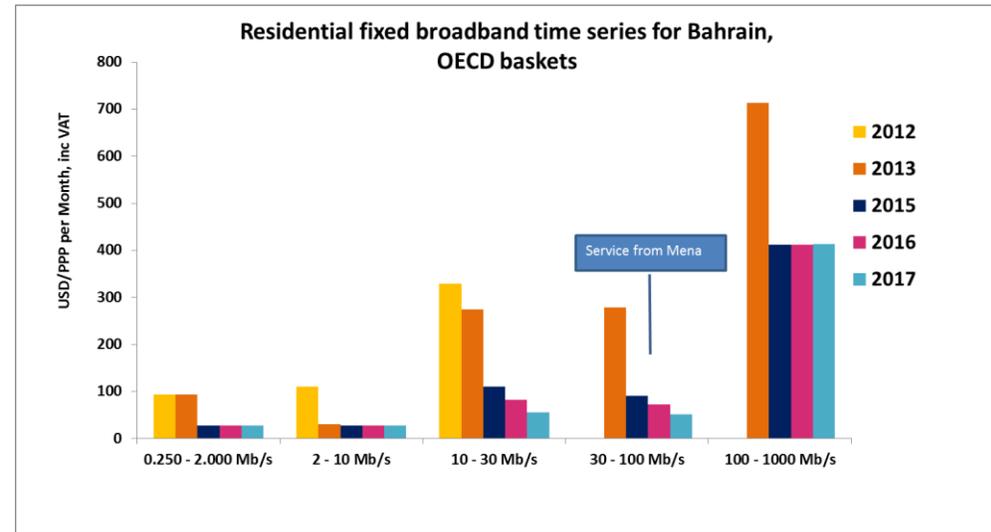
FIXED BROADBAND BASKETS, BUSINESS TARIFFS

- In contrast to the residential tariff basket results, the position of Bahrain when based on business services is a little more variable.
- For speeds up to 10 Mb/s, Bahrain (Batelco) has the cheapest offering, while in the 10-30 Mb/s and 30-100 Mb/s range, Batelco is second most expensive. In spite of this, for the 30-100 Mb/s range, Bahrain is the overall cheapest country, as a result of the very low cost LTE-based offer from Mena.
- In general, there is a fundamental difference between prices for business services in Arab and OECD countries.
- The results shown, including average results are for medium usage
- OECD Medium baskets are used (M1-M5), with increasing speed and usage requirements.



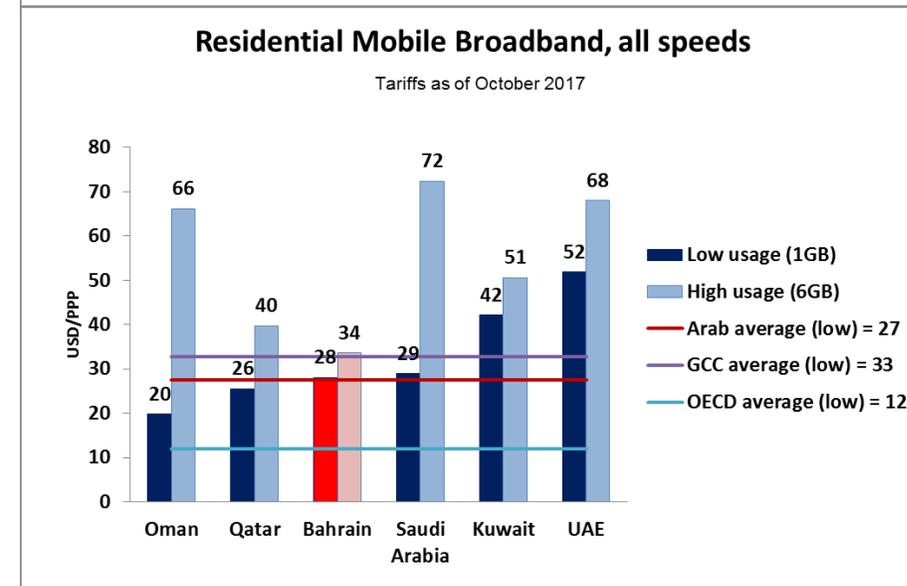
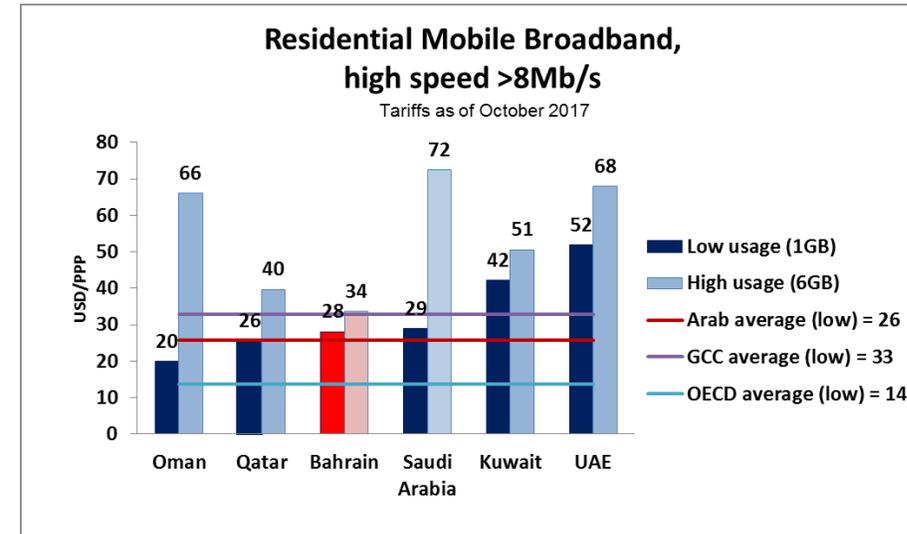
FIXED BROADBAND BASKETS TIME SERIES FOR BAHRAIN

- Since 2012, residential fixed broadband prices in Bahrain have fallen dramatically across all speed ranges.
- Since the last update, costs have either remained flat, or fallen.
- There is a fundamental difference in offers from Batelco, which are mainly distinguished by speed, and offers from Mena, which are mainly distinguished by data allowance.
- Business fixed broadband prices in Bahrain have remained flat in the ranges up to 2 Mb/s and 30-100 Mb/s, while costs for services in the ranges 2-10 Mb/s and 10-30 Mb/s have fallen.
- For both residential and business services, changes have not been especially dramatic.
- The Mena services have a nominal speed in the 60-70 Mb/s range. Actual experienced speed may be lower.



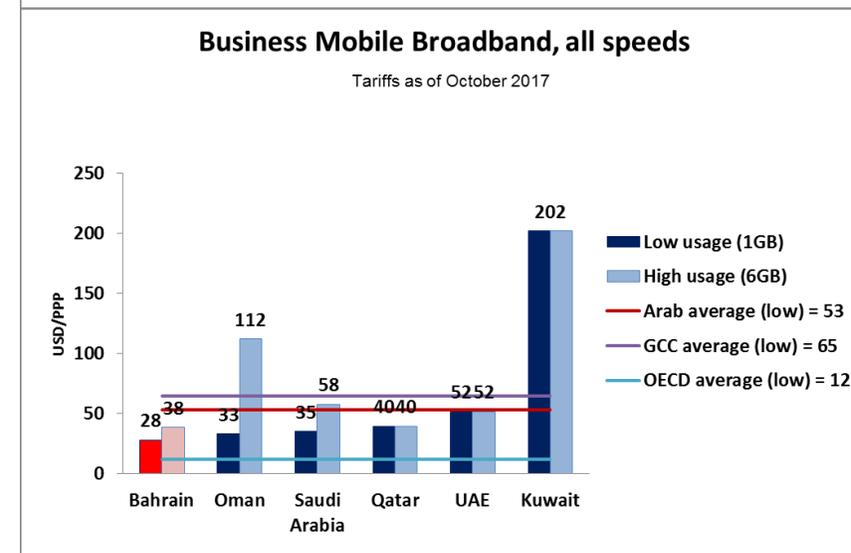
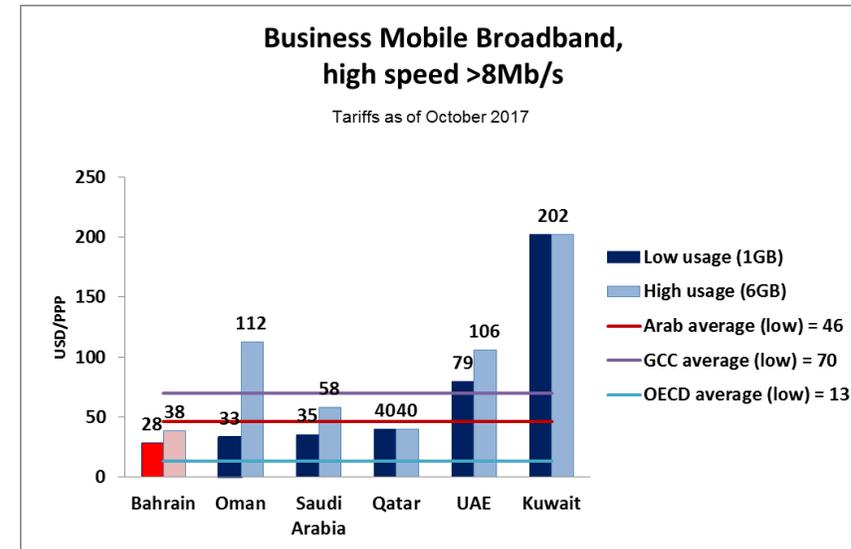
MOBILE BROADBAND BASKETS, RESIDENTIAL TARIFFS

- Tariffs specifically in the speed range 2-8 Mb/s are no longer available in Bahrain.
- For both the high speed (>8 Mb/s) baskets, and when all speeds are considered, Bahrain is the third cheapest of the GCC countries for low usage, just behind Qatar. For high usage, it is the cheapest.
- The OECD average is lower than the Arab average and the GCC average for both high speed (>8 Mb/s) baskets, and when all speeds are considered.
- Bahrain is on par with both the Arab and the GCC averages, but much higher than the OECD average.



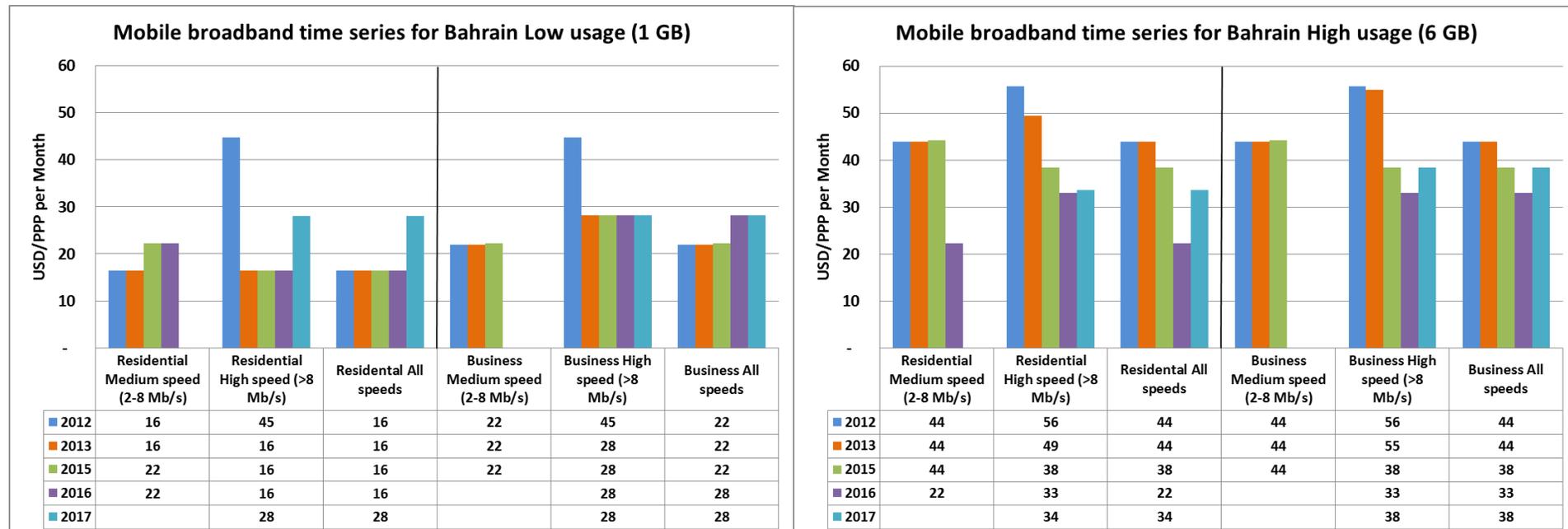
MOBILE BROADBAND BASKETS, BUSINESS TARIFFS

- Tariffs specifically in the speed range 2-8 Mb/s are no longer available in Bahrain.
- Bahrain is generally very competitive among the GCC countries for mobile broadband
 - Bahrain has the cheapest overall offer for both the high speed (>8 Mb/s) baskets, and when all speeds are considered, for both low and high usage.
- Similar to the residential basket, Bahrain is on par with the Arab and the GCC averages, but much higher than the OECD averages.



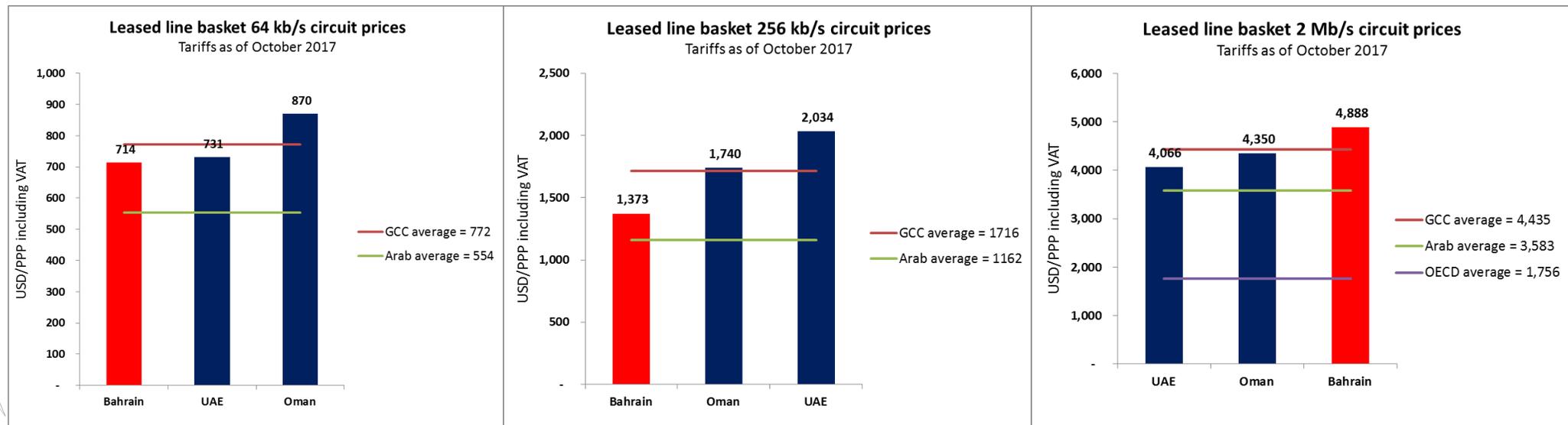
MOBILE BROADBAND BASKETS TIME SERIES FOR BAHRAIN

- Low speed residential services are no longer available in Bahrain. For higher speed services/all speeds, costs have risen, with greater increases seen for low usage. For higher usage, the removal of low speed services impacts the change in cost when all speeds are taken into account, resulting in an overall large increase. Over the past year, the Bahraini providers have repackaged mobile broadband offers to focus more on services with greater allowances and (and consequently, higher rentals), as well as higher speeds.
- Business service pricing has been much less changeable, with some smaller increases for higher speed services in particular.



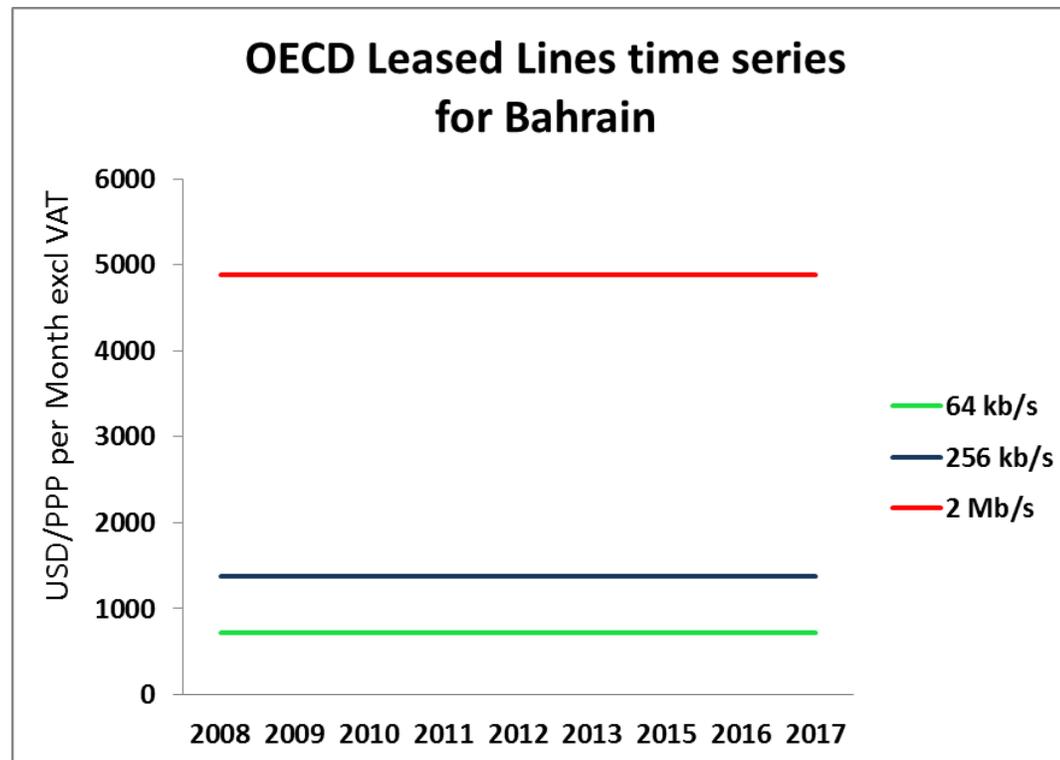
LEASED LINE BASKETS

- The position of Bahrain among its peers varies, depending on the speed of the circuit
- For both the 64 Kb/s basket and the 256 kb/s basket, Bahrain is the cheapest of the GCC countries.
- For the 2 Mb/s basket, Bahrain is the most expensive of the GCC countries.
- For the three baskets that feature Bahrain, only two other countries publish leased line prices – Oman and UAE.
- Prices for circuits above 2 Mb/s are not available for Bahrain.



LEASED LINE BASKETS TIME SERIES FOR BAHRAIN

- The prices for leased lines in Bahrain have not changed since first Arab Price Benchmarking Study in 2008
- A number of countries have stopped publishing prices since the last update.
- Although the general trend is static pricing (including across the OECD), where prices are published, UAE reduced prices across all circuit speeds since the last update.



RESIDENTIAL AGGREGATE BASKET ANALYSIS

- A simple aggregation of services for residential use has been constructed, based on three separate usage profiles, as follows:
- Low user: low usage across fixed and mobile voice, and with a requirement for only basic fixed broadband

| PSTN | Mobile voice | Fixed broadband |
|----------|------------------|-------------------|
| 20 calls | 30 calls + 100MB | L2: 2-10Mb/s, 5GB |

- Medium: a user who makes modest use of fixed and mobile voice and broadband services

| PSTN | Mobile voice | Fixed broadband | Mobile broadband |
|----------|-------------------|---------------------|-----------------------|
| 60 calls | 100 calls + 500MB | L3: 10-30Mb/s, 10GB | all speeds, low usage |

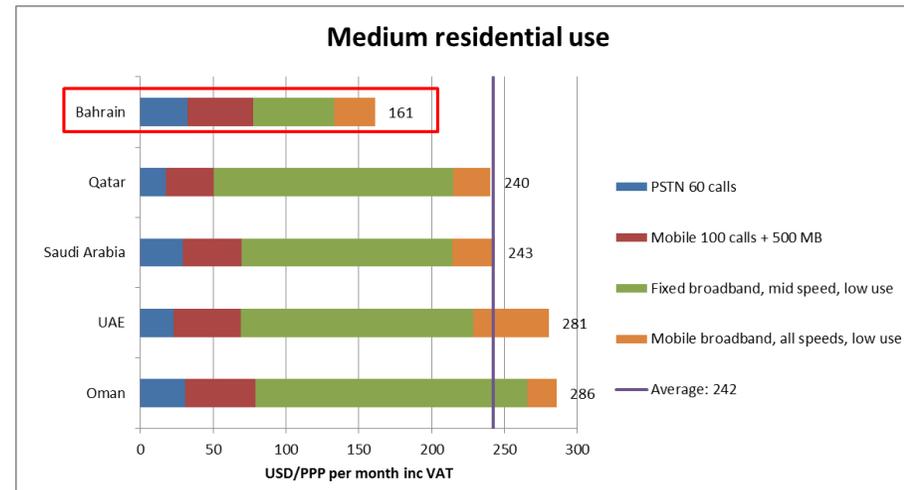
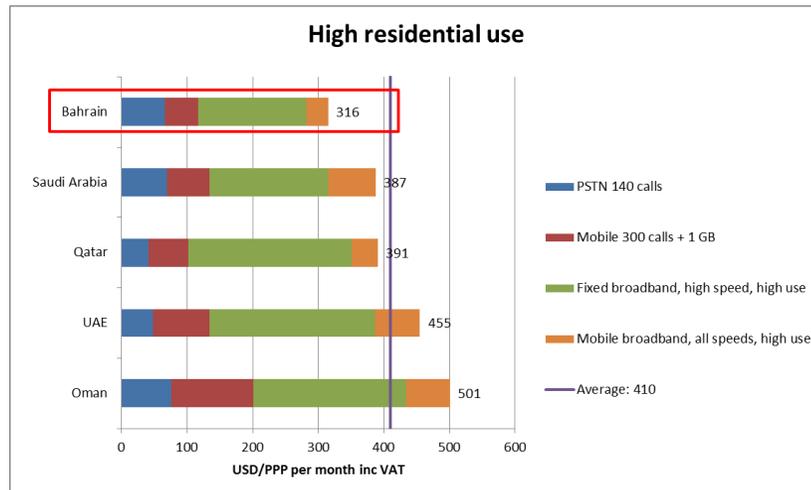
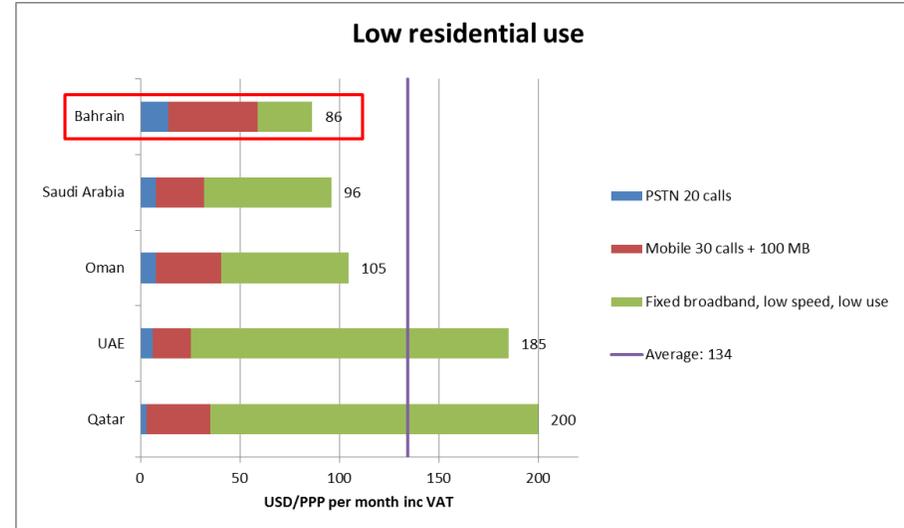
- High: a more intensive user, with high use of services, and with a requirement for higher broadband speeds than a medium user

| PSTN | Mobile voice | Fixed broadband | Mobile broadband |
|-----------|-----------------|-----------------------|------------------------|
| 140 calls | 300 calls + 1GB | H4: 30-100Mb/s, 200GB | all speeds, high usage |

- Each user profile has been costed by taking the result for each individual service basket, and summing to produce a total cost. This is a relatively simplistic method for considering multiple service use, however, it provides an indication of likely overall costs that different types of users will face.

RESIDENTIAL AGGREGATE BASKET RESULTS

- Bahrain is the cheapest across the 5 GCC countries for each of the low, medium and high residential baskets.
- For the low use basket, costs in Saudi Arabia, and Oman are on par with Bahrain.
- As usage increases, the cost difference between Bahrain and the other GCC countries increases.



Results include any adjustment due to reduced cost where the fixed broadband offer includes fixed voice service.

BUSINESS AGGREGATE BASKET ANALYSIS

- Similar to the approach for residential use, a simple aggregation of services has been constructed for business use, based on two separate usage profiles, as follows:
- Medium: a user who makes modest use of fixed and mobile voice and broadband services

| PSTN | Mobile voice | Fixed broadband | Mobile broadband |
|----------------------|-------------------|-------------------|-----------------------|
| 100 calls (business) | 100 calls + 500MB | L2: 2-10Mb/s, 5GB | all speeds, low usage |

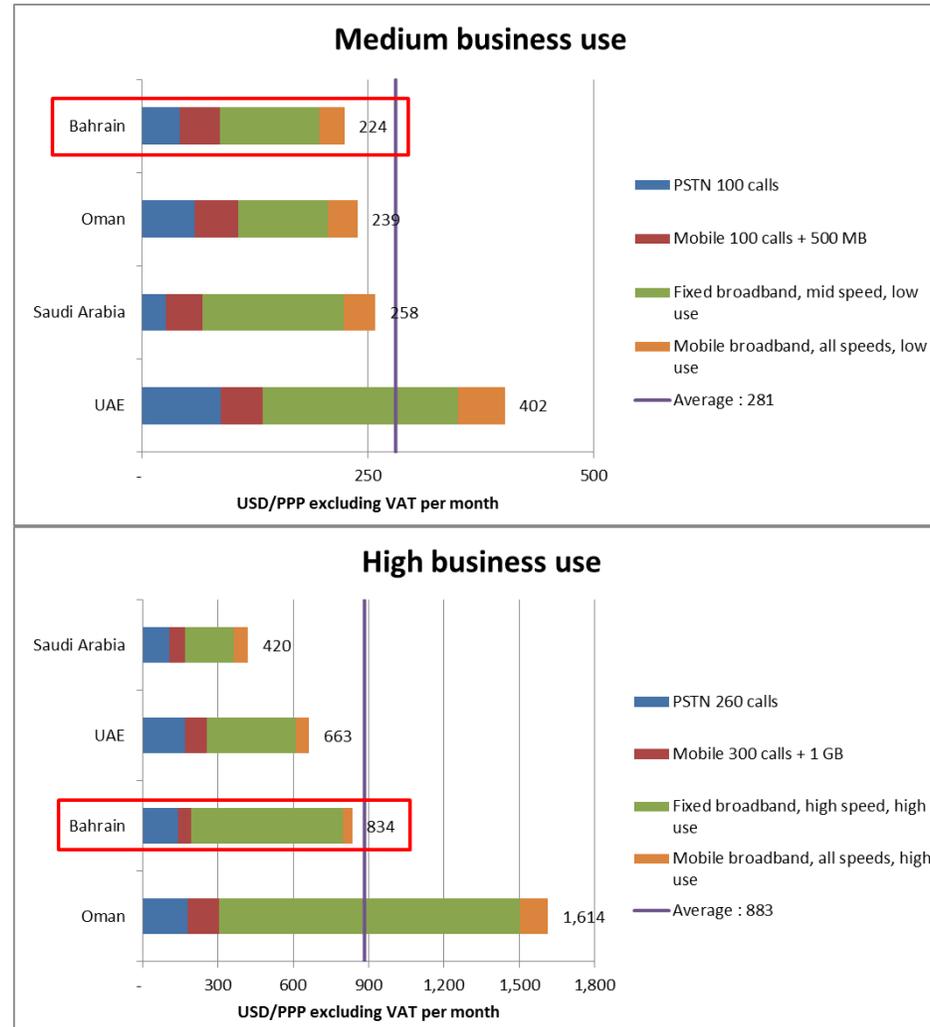
- High: a more intensive user, with high use of services, and with a requirement for higher broadband speeds than a medium user

| PSTN | Mobile voice | Fixed broadband | Mobile broadband |
|----------------------|-----------------|---------------------|------------------------|
| 260 calls (business) | 300 calls + 1GB | M3: 10-30Mb/s, 25GB | all speeds, high usage |

- The business profiles are similar to the residential profiles but use the business baskets (and business pricing) for fixed voice, and business pricing for fixed broadband. As many business users will use residential services for mobile, the results used for mobile voice and broadband services consider both business and residential offerings.
- Each user profile has been costed by taking the result for each individual service basket, and summing to produce a total cost. This is a relatively simplistic method for considering multiple service use, however, it provides an indication of likely overall costs that different types of users will face.
- As there are no business-specific fixed plans published for Saudi Arabia, residential services have been used, to ensure it is not entirely excluded from the aggregate analysis.

BUSINESS AGGREGATE BASKET RESULTS

- For medium business use, Bahrain is the cheapest of the GCC countries.
- For high business use, Bahrain is the second most expensive country in the GCC, below Oman, just below the GCC average.
 - Due to some business tariffs not being published in Qatar/some services being unavailable, Qatar has been excluded from the business results..



Results include any adjustment due to reduced cost where the fixed broadband offer includes fixed voice service

SUMMARY OF FINDINGS

| | Bahrain results compared to GCC averages | Bahrain results compared to Arab averages | Bahrain results compared to OECD averages |
|-------------------------------|--|---|---|
| PSTN (Low usage) | | | |
| PSTN (High usage) | | | |
| Mobile (Low usage) | | | |
| Mobile (High usage) | | | |
| Fixed broadband (Low speed) | | | |
| Fixed broadband (High speed) | | | |
| Mobile broadband (Low usage) | | | |
| Mobile broadband (High usage) | | | |
| Leased lines | | | * |

| | |
|-------------------------|--|
| Better than ... | |
| On par with ... | |
| More expensive than ... | |

* Only 2 Mb/s speed can be compared with the OECD data

ACRONYMS USED IN THE CONTEXT OF THIS REPORT

- OECD: Organisation of Economic Co-operation and Development
- OECD countries: Australia, Austria, Belgium, Canada, Chile, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Rep., Slovenia, Spain, Sweden, Switzerland, Turkey, UK, USA
- AREGNET: Arab Regulators Network.
- AREGNET member countries: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, UAE, Yemen
- PPP: Purchasing Power Parity, exchange rates adjusted for the purchasing power of consumers in each country. Used in international comparisons to adjust for market differences.
- Service: A telecommunications service
- Basket: A theoretical usage profile describing the usage volumes across different types of calls and/or different kinds of usage. The basket includes all important elements of the service, including fixed cost elements.
- Tariff: The description of all the end user prices related to a service
- Tariff element: The part of a tariff describing the price(s) for a single type of call or service component.
- Basket calculation: The process where the Basket is applied to the individual tariff in order to calculate the cost of the individual tariff elements and the overall cost.
- Basket result: The cost of using the service as described in the Basket.
- Re-balancing: The process through which the prices are changed so that individual Tariff elements will cover their own cost, and not subsidise other Tariff elements

The background is a solid green color. It is decorated with an abstract pattern of white lines and dots. The lines connect various points, creating a network-like structure. Some of these lines form larger, irregular shapes, possibly representing molecules or data points. The pattern is more dense in the corners and fades towards the center.

Thank you