

B I P T

**BELGIAN INSTITUTE FOR POSTAL SERVICES
AND TELECOMMUNICATIONS**

**Comparative study on the price level of telecom
products in Belgium, the Netherlands, France,
Germany and the United Kingdom [Tariffs of August
2013]**

as requested by Vice Prime Minister Johan Vande Lanotte, Minister of Economy,
Consumers and the North Sea.

*****DISCLAIMER: This study on telecom products offers an overall view of prices in various countries according to predetermined profiles. Because of methodological assumptions this study is not suitable for comparing operator tariffs within one and the same country.*****

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1 EXECUTIVE SUMMARY

Methodological key elements of the study:

- In total 591 tariff plans from five countries have been analysed (Belgium, the Netherlands, France, Germany and the United Kingdom). Only the prices mentioned on the operator's website and/or in his online price lists have been taken into account.
- The methodology applied in the study is based on the OECD methodology. Prices of telecom products are compared in a uniform way based on user profiles or product categories.
- User profiles take account of Belgian user behaviour and have been developed after an enquiry from the main Belgian operators. Therefore, they do not necessarily correspond with the average use of telecom products in the neighbouring countries. However, product categories divide tariff plans based on objective (technical) parameters.
- For each country at least three operators have been selected in order to give a representative picture of tariff plans on the market concerned. The total market share of these operators amounts to at least 85%.
- The tariffs were looked up between 06/08/2013 and 30/08/2013: as a result this study is a snapshot of telecom prices. The telecom market is dynamic and therefore the prices and/or structure of certain tariff plans are very likely to have changed in the meantime.
- The study only treats residential use (for consumers), thus excluding the business market.
- Prices are in euro, inclusive of VAT, adjusted according to purchasing power parity. Belgium has been considered to be the standard.
- Once-only installation costs and promotions restricted in time, have not been taken into account.
- Per operator for each profile the cheapest tariff plan has been included in the price comparison. The hypothesis is based on a "rational consumer" who will compare prices of his own accord and select a tariff plan that suits his needs best.

Important limitations inherent to a purely quantitative comparison of telecom products:

- In Belgium's neighbouring countries the minimum contract duration is typically one or two years, whereas the maximum actual contract duration in Belgium does not exceed six months. This difference in duration generally has an influence on the average price level observed, which probably puts Belgium at a disadvantage in this comparison.
- The results from the price comparison study are strongly dependent on the user profiles.
- Qualitative aspects (access to hotspots and Wi-Fi, free use of online music services, watching television on several devices, etc.) are not taken into consideration. Certain qualitative elements are explained in chapter 13, though.
- If the price comparison shows that a specific product A is cheaper than another product B, it does not automatically mean that product B is less advantageous for the customer, because certain qualitative aspects of product B which have not been included in the price comparison may be of use to him.

Summary of the results per segment

MOBILE TELEPHONY POSTPAID¹

On average, Belgium takes third place. In general, a consumer would pay slightly less in France or the United Kingdom for his mobile phone use. However, the difference with those countries is not big. The Netherlands and Germany are quite more expensive.

MOBILE TELEPHONY PREPAID²

Belgium and Germany alternately take second place (depending on the user profile). On average, the United Kingdom is cheaper. Belgian consumers would pay more in France and the Netherlands.

FIXED TELEPHONY³

Within the group of analysed countries, Belgium takes a favourable position. Belgium has the lowest weighted average price for three out of five profiles (profiles 2, 4 and 5). In profiles 1 and 3 France is cheapest. In all user profiles Belgian consumers would pay more in the Netherlands and the UK. Germany is sometimes cheaper, sometimes more expensive.

BROADBAND INTERNET⁴

The Belgian operators analysed in this price study only offer broadband at a minimum rate of 30 Mbps. In categories 2 and 3 the Belgian tariff plans are situated at either end of the price scale: prices are differentiated based on the download limit set within a tariff plan. Based on the median observation Belgium takes a less favourable third place within the group of four countries where this broadband category is offered.

MOBILE INTERNET (FOR TABLET USERS)

Compared to its neighbouring countries Belgium scores very well as regards tariff plans for low to medium use. The price level in Belgium is - on average - comparable to France and the United Kingdom. In the intensive use category Belgium has a lesser score: only in the Netherlands does a Belgian consumer have to pay more.

¹ The vast majority of mobile callers has a 'stand-alone' mobile contract, which means that only a very small minority concludes his mobile contract together with other telecom services (in a bundle).

² 48% of mobile callers use a prepaid card. On average, this group of users makes less calls than people with a postpaid subscription: only 14% of all outgoing call minutes is made as part of a prepaid tariff plan.

³ Of all households having a fixed telephony subscription 68% purchase it in a bundle. The other 32% purchases fixed telephony as a 'stand-alone' product. Therefore, the comparison exercise where the bundle includes fixed telephony, is more representative.

⁴ Of all households having a broadband subscription 78% purchase it in a bundle. Only 22% of the households with a broadband subscription purchase it as a 'stand-alone' product, which makes the comparison exercise for this segment less representative of the entire population.

DUAL PLAY (BROADBAND AND TELEVISION)⁵

The Belgian operators analysed offer dual play (broadband and television) at a broadband bit rate of 30 Mbps minimum. Besides Belgium this dual play combination is only offered by Dutch operators in categories 2 and 3. The Belgian offer is on average, clearly more competitive within this comparison exercise. As to dual play with an extremely fast broadband component (download speed of at least 100 Mbps) there was only one Belgian observation, which can only be compared with Dutch tariff plans, which are all cheaper.

DUAL PLAY (BROADBAND AND FIXED TELEPHONY)⁶

The Belgian operators analysed only offer dual play (broadband and fixed telephony) at a broadband download speed of 30 to 100 Mbps. Based on the median observation Belgium (with a large price range) takes a relatively favourable second place within the group of four countries where this dual play combination is offered in categories 2 and 3, closely followed by Germany and the Netherlands. The median average is lower in the United Kingdom, although in this comparison the cheapest tariff plan was observed in Belgium.

TRIPLE PLAY⁷

The Belgian operators analysed only offer triple play with a broadband bit rate of 30 Mbps minimum. Based on the median observation Belgium takes a less favourable third position within the group of four countries where triple play is offered for categories 2 and 3. No Belgian tariff plans can be found at the extreme bottom side of the price range. The United Kingdom is strongly represented in these categories, generally boasting reasonable tariff plans. The situation in the Netherlands is comparable to the one in Belgium, although the price range is a bit smaller. Germany scores well, but it is only represented with one tariff plan.

⁵ About 21% of Belgian households have a dual play bundle. The combination of broadband + television is most common (52% of all dual play bundles).

⁶ About 21% of Belgian households have a dual play bundle. The combination of broadband + fixed telephony is the second most common (30% of all dual play bundles).

⁷ A classical triple play (fixed telephony + broadband + television) is the bundle most purchased (about 33% of all households have a triple play bundle).

2 OBJECTIVE AND BASIC METHODOLOGY

1. The purpose of this study is to verify how the price level of telecom products on the Belgian market compares to the price level of similar products in the countries that surround us. BIPT started this study in 2012 at the request of vice prime minister Johan Vande Lanotte. A first edition (with data from August 2012) was published in the spring of 2013. This document is the second edition, with data from August 2013.
2. BIPT has examined the price level of telecom products in a group of five countries (Belgium, the Netherlands, France, Germany and the United Kingdom). A total of 591 tariff plans has been compared for residential users in the five countries mentioned above, including:
 - 272 for mobile telephony
 - 48 for fixed telephony
 - 56 for mobile Internet
 - 30 for broadband Internet
 - 80 for dual play offers
 - 60 for triple play offers
 - 45 for quadruple play offers.
3. The methodology used in this study is based on the methodology applied by the OECD for comparing prices of telecom products. In short, the OECD gives the following directions for making price comparisons:
 - offers are compared according to predetermined user profiles;
 - only offers the prices of which are clearly indicated on the operator's website are taken into account in the comparison exercise;
 - Internet offers allowing only a limited number of websites or only e-mail are discarded;
 - if several offers apply to the same profile, the cheapest offer is selected for the comparison;
 - at least two main operators (based on market share) are included in the study. If the combined market share of the two operators is below 80 per cent, several operators are included;
 - the total cost of a tariff plan is the sum of the monthly recurrent cost and the lease of the line or cable (if applicable). Once-only costs of terminal equipment (e.g. the purchase of a modem) are written down over a 3 year period.
4. In chapter 3 further details are given about the methodology. In general this comparison exercise was made in the same way as last year.

User profiles and product categories

5. To compare the complex price structure of the various tariff plans user profiles or product categories have been developed. A user profile is a description of the calling behaviour of a certain user and aims to determine (based on a number of objective parameters) what that user spends periodically and which tariff plan is most advantageous, and that for each operator. A product category is an enumeration of minimum requirements a tariff plan has to fulfil and aims to divide the tariff plans into groups. The outcome of this comparison is therefore closely linked with the choice of the user profiles and product categories. In the next chapters a distinction is made between user profiles and product categories. That distinction also has an influence on the statistics given, as is shown in the table below:

<u>User profile: mobile and fixed telephony</u>	<u>Product category: broadband and bundles</u>
<ul style="list-style-type: none">- Starts from the use of a consumer.- Does not exclude any tariff plans: the cost per profile can be calculated for each tariff plan.	<ul style="list-style-type: none">- Starts from objective parameters to divide all tariff plans into comparable categories;- Excludes certain tariff plans.
Comparison per country based on a weighted average per profile.	Comparison per country based on a median price , the minimum and maximum price observed per category.

6. Per user profile a weighted average is calculated. This average is obtained by multiplying the cheapest tariff plans per profile in one country with the market share⁸ a certain operator has on the market. It indicates how much an end-user who fits a certain profile, would spend on average in a country.
7. Per product category the median price observed and the minimum and maximum price per category were represented. For that purpose all tariff plans that are eligible for the category have been considered, so not only the cheapest tariff plans that have been selected for the overview. For broadband and bundles it is not possible to give a weighted average because the number of tariff plans observed per category is often not representative enough. In addition, not every operator is represented per category. As a

⁸ Market shares taken from operators' annual reports and data from national regulators, as mentioned by Ofcom on its website. This concerns combined market shares mobile market (postpaid/prepaid). Market shares have been rescaled to 100 (i.e. the operator market shares in a specific country have been adapted, so that together they amount to 100%). The market shares are based on the total number of active users per operator, not the number of users per tariff plan (those numbers are not available).

result, a weighted average would be based on a different weighing (market share) of the respective tariff plans, so that a comparison of the various weighted averages would be distorted.

8. BIPT has chosen to start as much as possible from consumer use and the product offer on the Belgian market⁹ and to compare telecom products in other countries to that standard. That method allows to find out what a Belgian consumer would pay abroad for a telecom product of about similar characteristics. In some cases, such as broadband, dual and triple play, it was advisable to add an extra product category to be able to take account of tariff plans that are very common abroad.
9. Using user profiles/product categories and the corresponding methodological choices, unavoidably has a number of disadvantages:
 - the first disadvantage is that the consumer use indicated in these profiles does not necessarily correspond with that of typical users in other studied countries and that product categories do not necessarily perfectly fit the product offer in those countries;
 - the second disadvantage is that a number of factors relating to tariff structure and product characteristics among other things, are not considered. Telecom products are more and more combined with extra services (e.g. free Wi-Fi, free premium TV channels) that are of extra use to consumers, but which are not directly quantifiable. Those qualitative elements are left out of consideration.
10. However, BIPT thinks that when interpreting this study sufficient account has to be taken of quantitative elements, which may all have a big influence on observable differences in price levels. Chapter 13 gives more details about qualitative aspects and differences between countries.

⁹ To develop the profiles an enquiry was made in 2012 into consumer use with the main Belgian telecom providers.

Representativeness

11. When selecting operators BIPT has striven for maximum representativeness on the analysed markets. For practical reasons only the major operators have been analysed (see figure). The operators included in this study always constitute together about 80 to 90 per cent of the total market for a specific product category in a specific country.

	Mobile telephony & mobile broadband	Fixed telephony	Broadband & bundles
Belgium	Base Belgacom Mobistar Telenet	Belgacom Numericable Telenet Voo	Belgacom Numericable Snow Telenet Voo
The Netherlands	KPN T-Mobile Vodafone	KPN Tele2 UPC Ziggo	KPN Tele2 UPC Ziggo
France	Bouygues Telecom France Telecom (Orange) Free SFR	Bouygues Telecom France Telecom (Orange) Free SFR	Bouygues Telecom France Telecom (Orange) Free Numericable SFR
Germany	Deutsche Telekom E-plus O2 Vodafone	1&1 Deutsche Telekom O2 Vodafone	1&1 Deutsche Telekom O2 Vodafone Unity Media (UPC)
United Kingdom	3UK EE (T-Mobile & Orange) O2 Vodafone	BT Sky Talktalk Virgin Media	BT Sky Talktalk Virgin Media

Figure 1: List of the operators included in this comparison.

3 METHODOLOGY

12. A total of 591 tariff plans for residential users in a group of five countries, namely Belgium, the Netherlands, France, Germany and the United Kingdom have been compared. The choice of this comparison group results from the request made by vice prime minister Johan Vande Lanotte, to compare telecom tariffs with our neighbouring countries. Because of their proximity these countries are a traditionally often used comparison group.
13. Moreover a number of objective criteria indicate that those countries are indeed a relevant comparison group. The price analysis will show for instance that several operators are offering tariff plans in several of these countries (e.g. Orange, KPN, Vodafone, O2, ...). Apart from that, a number of socio-economic characteristics are comparable between those countries, as is shown in the figure below.

Country	Employment (15-64 years)	Nominal GDP per inhabitant, in EUR
Belgium	67.7	34,000
The Netherlands	79.7	35,800
France	71.3	31,100
Germany	77.5	32,600
United Kingdom	76.6	30,500

Figure 2: Socio-economic factors in the comparison group: employment (Source: OECD Statistics 2012) and nominal GDP (Source: Eurostat 2012).

14. For each user profile the monthly cost has been calculated for each tariff plan. When using product categories only those tariff plans that correspond with the product category have been considered. Each time - per profile or product category - the cheapest tariff plan per operator has been selected for the comparison.
15. All tariffs have been collected in August 2013. Any changes made in operator tariff plans after August 2013, have not been included in the price comparison. As a result this study is only a snapshot of the price level, not a dynamic representation of prices over a certain period.
16. During the collection of the tariff plans no account was taken of (temporary) promotions or discounts for new customers. That way it is investigated how much a consumer would pay, as if he has been an operator's customer for several years already, as it were. When

the price of a specific tariff plan depended on the contract duration, the longest contract duration has been selected¹⁰.

17. This 'long-term' perspective has an influence on the price level observed in each country. In Belgium's neighbouring countries the minimum contract duration is typically one or two years. The monthly price of a tariff plan with a two year contract duration is often lower than the price a consumer would pay if he committed himself to one year. In Belgium consumers have the right to cancel their contracts unilaterally after six months already, without having to pay an early termination fee. The minimum contract duration chosen has an impact on the price level observed for each country in this comparison.
18. All prices mentioned concerning residential users are inclusive of VAT, in order to reflect the price actually paid by the consumer. The VAT percentage slightly differs between countries, however. Prices are adjusted according to purchasing power parity (Euro PPP)¹¹. This purchasing power parity is a measure to compare the price level in various countries, taking account of the relative purchasing power in a particular country, according to a commonly defined set of goods and services. In this case Belgium is taken as the reference point. That way it is indicated how much a consumer would pay for a particular product abroad with the same level of purchasing power as the Belgian consumer.

Country	VAT percentage	PPP (EU27 = 1)	PPP (Belgium = 1)
Belgium	21%	1.11881	1
The Netherlands	21%	1.09320	0.9771
France	19.6%	1.12957	1.0096
Germany	19%	1.04077	0.9302
United Kingdom	20%	0.870992	0.7785

Figure 3: VAT % (Source: OECD Statistics) and PPP (Source: Eurostat database).

19. Further on in this chapter the methodological choices of the study are treated more profoundly. In section 3.7 further explanation is given about a number of general points of interest regarding the interpretation of this study.

¹⁰ In practice, a two year contract duration has been chosen. In Belgium by definition the minimum contract duration is six months.

¹¹ The correction factor also covers the rate of exchange; this is important for the United Kingdom. For a detailed description and more background information about how the data concerning purchasing power parity have been created, we refer to the Eurostat website:
http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/prc_ppp_esms.htm.

3.1 Mobile telephony postpaid

Cost calculation mobile telephony postpaid

20. When determining the monthly recurrent cost of the tariff plans for postpaid mobile telephony, account has been taken of the following elements:
 - the monthly subscription fee that is due and the call minutes, SMS messages and mobile data included in that fee.
21. Apart from that depending on the profile chosen (see below) the cost of the following elements has been calculated:
 - the number of call minutes, SMS messages and any mobile data in the profile, not included in the subscription;
22. Account has also been taken of possible extras regarding:
 - extras for the number of call minutes (e.g. fixed fee for unlimited on-net calling);
 - extras for SMS messages (e.g. flat fee for unlimited texting);
 - extras for mobile data (e.g. flat fee per 500 MB of data).
23. Any other extras have been left out of consideration¹². As mentioned in section 3.7 offers do not distinguish themselves purely based on their price levels. Qualitative aspects also play a role, such as giving free content in the form of free Wi-Fi or access to hotspots, free use of Facebook and Twitter, free access to a music service, etc. These qualitative advantages have not been taken into account in the price comparison.
24. Tariff plans where the end-user pays at the end of the month according to his usage and where no fixed subscription fee is required, are included in the price comparison of postpaid tariffs¹³. Tariff plans only sold online have also been included. Limited use tariff plans with (e.g. blocked flat rates) have been left out of consideration.
25. No account has been taken of promotions giving a temporary reduction on the monthly subscription fee for new customers. In some countries the price of the tariff plan depends on the contract duration set by the customer. In that case the longest contract duration possible has been selected, which for most countries corresponds to 24 months. In Belgium consumers have the right to cancel their contracts after six months unilaterally and for free, as laid down in the Telecom Act of 13 June 2005. In reality most Belgian telecom operators do not impose a contract duration, which means that customers can cancel their contracts at any time and switch to another operator - see also section 3.7.

¹² This involves among other things extras for international calls and extras for cheap and/or free calls to a limited number of personally selected numbers or a free service bundle added to the offer.

¹³ An example of such a tariff plan is Telenet's "Prijs volgens gebruik" ("Price according to usage"). Contrary to prepaid tariff plans for these tariff plans the customer is not required to charge a specific amount in advance.

26. Once-only charges, such as the purchase or activation of a SIM card, have been left out of consideration. Extra tariffs for extra services not included in the description above have also been left out of account¹⁴.
27. MMS tariffs and international rates for calls/SMS messages/data (roaming) have not been taken into account in the profiles selected.
28. Consumer behaviour is not uniform in all countries; this factor is one to make a price comparison extra complicated. An example is the importance of conditional sales (*handset subsidy*). Conditional sales, where subscription formulas are offered in combination with the sale of a GSM handset, have been left out of the price comparison. As a result the tariff formulas are always "SIM only". According to Belgian operators conditional sales form only a small part of the tariff plans sold. Abroad conditional sales are a more common practice: that is why customers are quicker to change their handsets ((OECD: Mobile Handset Acquisition Models). Seeing that SIM only tariff plans are less commonly bought foreign tariff plans are less representative in this comparison.

Explanation about profiles for mobile telephony postpaid

29. In order to have a solid basis of comparison to compare the various tariff plans in a relevant way, six consumer profiles have been selected, all of which imply a specific usage by the end-user¹⁵. The figure below gives an overview of those profiles.

Profile 1: Few calls (no data): 60 call minutes, 50 SMS messages, no data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	50	-
60%	On-net	36 min	9 min	14 min	13 min		
40%	Off-net	24 min	6 min	10 min	8 min		
Total		60 min	15 min	24 min	21 min		

Profile 2: Average calls (no data): 120 call minutes, 100 SMS messages, no data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	100	-
60%	On-net	72 min	18 min	28.8 min	25.2 min		
40%	Off-net	48 min	12 min	19.2 min	16.8 min		
Total		120 min	30 min	48 min	42 min		

¹⁴ This concerns a wide range of additional tariffs, such as tariffs for the use of customer services and the purchase of a SIM card.

¹⁵ The profiles have been developed to reflect consumer usage on the Belgian market and to apply it to tariff plans abroad. When choosing these profiles the main mobile operators on the Belgian market have been consulted with. The choice of the profiles and their parameters have a big influence on the results of the price level comparison.

Profile 3: Few calls (a lot of data): 60 call minutes, unlimited SMS messages, 500 MB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	Unlimited	500 MB
60%	On-net	36 min	9 min	14.4 min	12.6 min		
40%	Off-net	24 min	6 min	9.6 min	8.4 min		
Total		60 min	15 min	24 min	21 min		

Profile 4: Average calls (with data): 120 call minutes, 100 SMS messages, 50 MB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	100	50 MB
60%	On-net	72 min	18 min	28.8 min	25.2 min		
40%	Off-net	48 min	12 min	19.2 min	16.8 min		
Total		120 min	30 min	48 min	42 min		

Profile 5: Average calls, off-peak (with data): 100 call minutes, 100 SMS messages, 100 MB							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			10%	60%	30%	100	100 MB
60%	On-net	60 min	6 min	36 min	18 min		
40%	Off-net	40 min	4 min	24 min	12 min		
Total		100 min	10 min	60 min	30 min		

Profile 6: A lot of calls (with data): 300 call minutes, unlimited SMS messages, 1 GB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	Unlimited	1 GB
60%	On-net	180 min	45 min	72 min	63 min		
40%	Off-net	120 min	30 min	48 min	42 min		
Total		300 min	75 min	120 min	105 min		

Figure 4: Survey profiles mobile telephony postpaid

30. Profiles 1 and 2 include no mobile data. Profiles 3 up to and including 6 do have mobile data. Therefore the latter profiles are more forward-looking, since not all mobile telephony buyers also use mobile data (see topic 4 in chapter 13).
31. As can be deduced from the figure above, account has been taken of the number of call minutes, SMS messages and data usage to calculate the monthly recurrent cost of a tariff plan. The number of call minutes is divided according to destination (on-net/off-net) and period (peak, off-peak, weekend). Each time free call minutes and other extras have also been applied according to the division indicated in these profiles. Certain operators offer free SMS messages, only to on-net numbers. In that case it has been assumed that 60% of SMS messages - fixed in the profile - are sent on-net and 40% of the texts are sent off-net.
32. The profiles in the figure above have been applied to all postpaid tariff plans. Next, for each profile it has been investigated which tariff plan is cheapest per operator. This

cheapest tariff plan per operator for a certain profile has been included in the price comparison¹⁶.

33. Some profiles include "unlimited SMS messages". In that case the monthly cost has been determined for 1,000 SMS messages.
34. Based on an inquiry of Belgian operators, aggregated numbers of BIPT show that the average monthly volume of calls per active mobile subscriber in 2012 is 101 minutes. On average, 171 SMS messages were sent a month. 39.7% of the total number of active mobile users uses mobile data and per mobile data user an average of 60 MB was consumed in 2012.
35. 86% of call minutes are made by cell-phone users with a postpaid subscription (at the end of 2012). The other 14% of call minutes are made as part of a prepaid tariff plan. The proportion of the number of customers with a postpaid subscription is 52% compared to the number of customers with a prepaid subscription (48% at the end of 2012). Mobile data are used for 85% by way of postpaid tariff plans. 15% are sold through prepaid tariff plans. Therefore postpaid consumers are - on average - bigger users than people with a prepaid card.

¹⁶ The consumer has been assumed to act rationally and to choose the cheapest offer available from a specific operator based on his usage. For more explanation about this assumption, see section 3.7.

Choice of mobile telephony operators (postpaid)

36. The figure below lists the operators and their tariff plans that have been taken into consideration for mobile telephony. In total, for the five countries 20 operators are involved and overall, 143 tariff plans have been analysed.

BE				
Belgacom Easy+ 10	Telenet King	Base B-0	Mobistar Kangoeroe 8	
Belgacom Easy+ 15	Telenet Kong	Base B-9	Mobistar Kangoeroe 16	
Belgacom Easy+ 25	Telenet Prijs volgens gebruik	Base B-19	Mobistar Kangoeroe 42	
Belgacom Easy+ 45		Base B-29	Mobistar Dolfijn 12	
Belgacom Smart+ 15		Base B-39	Mobistar Dolfijn 15	
Belgacom Smart+ 25		Base B-49	Mobistar Dolfijn 20	
Belgacom Smart+ 35		Base B-59	Mobistar Panter 28	
Belgacom Smart+ 65		Base Check 15	Mobistar Panter 45	
Belgacom Generation MTV 10		Base Check 25	Mobistar Panter 60	
Belgacom Generation MTV 15		Base Check 35		
Belgacom Generation MTV 25				
NL				
T-Mobile Smart Seconds 50 (Sim Only)	Vodafone Red Essential	KPN Budget 100		
T-Mobile Smart Seconds 200 (Sim Only)	Vodafone Red	KPN Budget 150		
T-Mobile Stel Samen	Vodafone Red Super	KPN Basis 100		
	Vodafone Bel+Sms+Web 100	KPN Basis 200		
	Vodafone Bel+Sms+Web 200	KPN Alles-in-één Instap		
	Vodafone Scherp Small	KPN Alles-in-één Standaard		
	Vodafone Scherp Medium	KPN Alles-in-één Premium		
	Vodafone Scherp Large			
UK				
3 Essential Internet 200	T-Mobile Sim Only 8	Vodafone Red 9	EE Sim Only 21	O2 Sim Only 8
3 Essential Internet 600	T-Mobile Sim Only 11	Vodafone Red 13	EE Sim Only 26	O2 Sim Only 11
3 The One Plan	T-Mobile Sim Only 16	Vodafone Red 16	EE Sim Only 31	O2 Sim Only 16
	T-Mobile Sim Only 21	Vodafone Red 21	EE Sim Only 36	O2 Sim Only 21
	T-Mobile Sim Only 26	Vodafone Red 26	EE Sim Only 41	O2 Sim Only 26
		Vodafone Red 31	EE Sim Only 61	
FR				
Bouygues Forfait 2h	Orange M6 Mobile 2h 50Mo	SFR Carré 2h 50Mo	Free Forfait	
Bouygues Forfait 2h 1Go	Orange M6 Mobile 2h Internet	SFR Carré 2h 500Mo	Free Forfait €2	
Bouygues Forfait Sensation	Orange Origami Zen	SFR Carré 24h/24h		
Bouygues Forfait Sensation Premium	Orange Origami Zen 500Mo	SFR Carré 2Go		
Bouygues Forfait 44,99	Orange Origami Play 2Go	SFR Carré 4Go		
Bouygues Forfait Bloqué	Orange Origami Play 4Go	SFR Carré 6Go		
	Orange Origami Jet 59,9	SFR Carré Voyageur		
	Orange Sosh 4,9	SFR Carré Bloqué 14,99		
	Orange Sosh 9,9	SFR Carré Bloqué 9,99		
	Orange Sosh 19,9	SFR RED Bloqué		
	Orange Sosh 24,9	SFR RED 2h + SMS		
		SFR RED 24h/24h		
		SFR RED 3Go		
DE				
T-Mobile Call 50	Vodafone Red S	E-Plus Pur Classic	O2 Blue Basic	
T-Mobile XS	Vodafone Red S Allnet	E-Plus Smart Classic	O2 Blue Select	
T-Mobile S	Vodafone Red M	E-Plus All-In Classic	O2 S	
T-Mobile M	Vodafone Red L	E-Plus Pur	O2 Nxt	
T-Mobile L	Vodafone Red Premium	E-Plus Smart	O2 M	
T-Mobile XL	Vodafone Smart S	E-Plus All-In	O2 L	
T-Mobile XXL	Vodafone Smart M	E-Plus All-In Plus	O2 XL	
T-Mobile Comfort Friends S	Vodafone Basic 50			
T-Mobile Comfort Friends M	Vodafone Basic 100			
T-Mobile Comfort Friends L				
T-Mobile Comfort Friends XL				
T-Mobile Comfort Friends XXL				

Figure 5: list of all tariff plans included for postpaid mobile telephony.

3.2 Mobile telephony prepaid

Cost calculation mobile telephony prepaid

37. When determining the monthly recurrent cost of the tariff plans for prepaid mobile telephony, account has been taken of the following elements:
 - the amounts to be (re)charged for each tariff plan and the call minutes, SMS messages and mobile data included in the (re)charge;
 - extra call minutes, SMS messages and/or mobile data offered to the end-user as a 'bonus' when recharging a certain amount within a certain space of time (usually within a month).
38. If applicable and when cheaper for the customer, account has been taken of the purchase of a bundle of call minutes and/or SMS messages and/or mobile data (e.g. unlimited on-net calls or unlimited SMS messages for a fixed amount).
39. The user recharges at least once a month. If the value of the initial monthly (re)charge - as the case may be, combined with the 'bonus' value - is not enough to cover the monthly consumption, the user will recharge a second time before the end of the month. In that case only the additional consumption is charged and not the total amount of that extra recharge. The credit thus accumulated (the value of the recharge minus the additional consumption) is left out of consideration. The monthly cost is at least the amount of the initial monthly recharge, even if the consumption is lower than that r(e)charge.
40. Once-only charges, such as the purchase or activation of a SIM card, have been left out of consideration. Extra tariffs for extra services not included in the description above have also been left out of account¹⁷.
41. The profiles for prepaid mobile telephony (see below) do not take account of tariffs for international calls and SMS messages, nor roaming.
42. Conditional sales, where subscription formulas are offered in combination with the sale of a GSM handset, have been left out. As a result the tariff formulas are always "SIM only". Since conditional sales are more common abroad, the selected tariff plans for the neighbouring countries may be less representative (see above).

¹⁷ This concerns a wide range of additional costs, such as the purchase of a SIM card or the use of customer services (which is free in Belgium, but sometimes payable in the neighbouring countries).

Explanation about profiles for mobile telephony prepaid

43. For the price comparison for prepaid tariff plans for mobile telephony too, 4 consumer profiles have been used. The figure below gives an overview of those profiles.

Profile 1: Few calls (no data): 50 call minutes, 100 SMS messages							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	100	-
65%	On-net	32.5 min	13 min	9.75 min	9.75 min		
35%	Off-net	17.5 min	7 min	5.25 min	5.25 min		
Total		50 min	20 min	15 min	15 min		

Profile 2: Few calls (no data): 100 call minutes, 150 SMS messages							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	150	-
65%	On-net	65 min	26 min	19.5 min	19.5 min		
35%	Off-net	35 min	14 min	10.5 min	10.5 min		
Total		100 min	40 min	30 min	30 min		

Profile 3: Average calls (with data): 50 call minutes, 50 SMS messages, 50 MB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	50	50 MB
65%	On-net	32.5 min	13 min	9.75 min	9.75 min		
35%	Off-net	17.5 min	7 min	5.25 min	5.25 min		
Total		50 min	20 min	15 min	15 min		

Profile 4: Few calls (a lot of data): 20 call minutes, unlimited SMS messages, 1 GB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	1000	1 GB
65%	On-net	13 min	5.2 min	3.9 min	3.9 min		
35%	Off-net	7 min	2.8 min	2.1 min	2.1 min		
Total		20 min	8 min	6 min	6 min		

Figure 6: Survey profiles mobile telephony prepaid.

44. As can be seen in this figure, the monthly recurrent cost of a certain tariff plan has been worked out, taking account of the number of call minutes, SMS messages and mobile data. The number of call minutes is divided according to destination (on-net/off-net) and period (peak, off-peak, weekend). When determining the relevant monthly cost the type of recharge or combination of recharges sufficient to satisfy a specific type of consumer use is examined. Bonus minutes and extra SMS messages have been taken into consideration. Certain operators offer free SMS messages, only to on-net numbers. In that case it has been assumed that 60% of SMS messages - fixed in the profile - are sent on-net and 40% of the texts are sent off-net.

45. After having applied a certain profile to all prepaid tariff plans of an operator, it was examined which tariff plan was cheapest for that particular profile. Next, the cheapest offer for each operator for a certain profile has been included in the price comparison.

46. In Belgium, 48% of cell phone users recharge their call credit by means of a prepaid card. The other 52% has a postpaid subscription. In Germany (53% prepaid) and the UK (47% prepaid) the ratio is about the same. In the Netherlands the majority has a subscription, 40% of mobile callers using prepaid. In France, prepaid is less common: only a quarter of customers has no subscription.

Choice of mobile telephony operators (prepaid)

47. The figure below lists the operators and their tariff plans that have been taken into consideration for prepaid telephony. In total, for the five countries 18 operators are involved and overall, 29 tariff plans have been analysed.

BE				
Mobistar Eekhoorn 5	Belgacom Pay and Go Easy	Base B-prepaid 5		
Mobistar Eekhoorn 10	Belgacom Pay and Go Easy 15	Base B-prepaid 10		
Mobistar Eekhoorn 15	Belgacom Pay and Go Easy 25	Base B-prepaid 15		
Mobistar Eekhoorn 25	Belgacom Pay and Go Easy 50	Base B-prepaid 20		
Mobistar Eekhoorn 50	Belgacom Pay and Go Smart	Base B-prepaid-Base 5		
Mobistar Kangoeroe 5	Belgacom Pay and Go Smart 15	Base B-prepaid-Base 10		
Mobistar Kangoeroe 10	Belgacom Pay and Go Smart 25	Base B-prepaid-Base 15		
Mobistar Kangoeroe 15	Belgacom Pay and Go Smart 50	Base B-prepaid-Base 20		
Mobistar Kangoeroe 25	Belgacom Generation Connect	Base Check prepaid 10		
Mobistar Kangoeroe 50	Belgacom Generation Connect 20	Base Check prepaid 15		
Mobistar Dolfijn 5	Belgacom Generation Connect 25	Base Check prepaid 20		
Mobistar Dolfijn 10	Belgacom Generation Connect 50			
Mobistar Dolfijn 15				
Mobistar Dolfijn 25				
Mobistar Dolfijn 50				
Mobistar Internet on Mobile 15				
Mobistar Internet on Mobile 20				
NL				
Vodafone Prepaid+	T-Mobile Prepaid	KPN Prepaid		
Vodafone Prepaid+ 20				
Vodafone Kind Veilig				
UK				
Vodafone Freedom 10	T-Mobile Smart Pack 10	Orange Dolphin 15	3UK Prepaid 10	O2 Pay & Go Go Go
Vodafone Freedom 20	T-Mobile Smart Pack 15	Orange Dolphin 20	3UK Prepaid 15	O2 Unlimited 10
Vodafone Freedom 30	T-Mobile Smart Pack 25	Orange Canary 10		O2 Unlimited 15
Vodafone Freedom 40	T-Mobile Prepaid Tekst	Orange Canary 15		
Vodafone Web&Tekst 10	T-Mobile Prepaid International	Orange Canary 30		
Vodafone Web&Tekst 15		Orange Racoon 10		
Vodafone Web&Tekst 30		Orange Racoon 15		
Vodafone Weekend		Orange Racoon 30		
Vodafone Talk		Orange Camel 10		
		Orange Camel 15		
		Orange Camel 30		
FR				
Bouygues Formule 24/24 20	Orange Prepayé 25	SFR Classique 15		
Bouygues Formule 24/24 25	Orange Prepayé 35	SFR Classique 25		
Bouygues Formule 24/24 35	Orange Prepayé 50	SFR Classique 35		
Bouygues Formule 24/24 60	Orange Prepayé 75	SFR Classique 65		
Bouygues Classique 15	Orange Prepayé 100	SFR Classique 95		
Bouygues Classique 20	Orange Max 20	SFR Illimitée		
Bouygues Classique 25	Orange Max 30			
Bouygues Classique 35				
Bouygues Classique 60				
DE				
Vodafone CallYa Talk&SMS 15	E-Plus Time & More 15	T-Mobile Xtra Card	O2 Loop	
Vodafone CallYa Talk&SMS 25	E-Plus Time & More 20	T-Mobile Xtra Call	O2 Loop Smart	
Vodafone CallYa Talk&SMS 50	E-Plus Time & More 30	T-Mobile Xtra Triple		
Vodafone CallYa Fun 10	E-Plus Time & More Web 15	T-Mobile Xtra Triple 3-flat		
Vodafone CallYa Fun 10	E-Plus Time & More Web 20			
Vodafone CallYa Fun 10	E-Plus Time & More Web 30			
Vodafone CallYa Fun 15	E-Plus Zehnsation 15			
Vodafone CallYa Fun 15	E-Plus Zehnsation 20			
Vodafone CallYa Fun 15	E-Plus Zehnsation 30			
Vodafone CallYa Fun 25	E-Plus Zehnsation Web 15			
Vodafone CallYa Fun 25	E-Plus Zehnsation Web 20			
Vodafone CallYa Fun 25	E-Plus Zehnsation Web 30			
	E-Plus Travel & Talk 15			
	E-Plus Travel & Talk 30			

Figure 7: list of all tariff plans included for prepaid mobile telephony.

3.3 Fixed telephony

Cost calculation fixed telephony

48. The cost of a fixed telephony tariff plan comprises the following monthly recurrent costs - if applicable:
- the subscription fee of the tariff plan;
 - the costs related to the call minutes not included in the subscription¹⁸. For each profile the call minutes are divided according to the nature of the connection (fixed/mobile) and the period (peak/off-peak/weekend), for which operators often charge differentiated rates. If relevant, the geographical destination (local/long-distance) and the network type (on-net/off-net) have been taken into consideration. To determine the relative importance of on-net traffic, we take the operator's market share as the basis;
 - line rental (i.e. the cost a customer has to pay to have a broadband or fixed telephony line at his disposal, apart from his subscription fee);
 - rental of equipment or once-only purchase of the equipment if the purchase is cheaper (equipment is written down over a period of 36 months).
49. Account has been taken of options as regards the number of call minutes (e.g. for an additional flat fee customers can make unlimited calls during the weekend). A standard tariff with option is regarded as a separate tariff plan and contains in the description the name of the option preceded by the word "with" (e.g. Tariff plan X with "Weekend Unlimited").
50. In every user profile (see below) a number of calls is defined. In this study we assume that a call to a fixed telephone number lasts five minutes. A call to a mobile number lasts two minutes.
51. Once-only costs, such as installation and activation, are not taken into consideration. Tariffs for extra services, as well as tariffs for international communication and calls to special numbers, have also been left out.
52. Fixed telephony is more and more included in bundles (multiple play, see topic 6 in chapter 13). In such multiple play offers a fixed telephony component is often present which includes a *flat fee* use (e.g. 'unlimited calls to domestic numbers' or 'unlimited calling during the weekend'). Therefore, fixed telephony is increasingly added as a (partially) free component to multiple play offers. That is why the analysis of stand-alone fixed telephony offers in chapter six only gives a partial picture of the real price level of fixed telephony according to the actual consumer use.
53. Certain operators do not offer fixed telephony anymore unless it is combined with other services. Those tariff plans are not included in the price comparison for fixed telephony,

¹⁸ Including set-up charges if applicable.

but they may be part of a bundled offer. This is the case with the following geographical markets and operators.

- In the **Netherlands** UPC and Ziggo offer fixed telephony combined with television (UPC Bellen, UPC Bellen Basis, UPC Bellen Onbeperkt Avond & Weekend and UPC Bellen Onbeperkt Altijd) and both Internet access and television (Ziggo Telefonie Z1, Ziggo VolopBellen Avond/Weekend and Ziggo VolopBellen Altijd);
- In **France** Bouygues and Free offer fixed telephony only in combination with Internet access (Bouygues BBox Sensation (zone non-dégrouper), Free (Zones Dégrouper) and Free (Zones Non Dégrouper) and both Internet access and television (Bouygues BBox (zone dégroupée);
- In **Germany** fixed telephony is provided by operators O2 and 1&1 only in combination with Internet access (O2 DSL S, O2 DSL M, O2 DSL L, 1&1 Surf-Flat 6.000, 1&1 Surf & Phone Flat Special, 1&1 Doppel-Flat 2.000 Basic, 1&1 Doppel-Flat 6.000, 1&1 Doppel-Flat 16.000 and 1&1 Doppel-Flat 50.000);
- Finally in the **United Kingdom** Virgin Media offers fixed telephony only in combination with other products.

Explanation about profiles for fixed telephony

54. In order to have a solid basis of comparison to compare the various tariff plans in a relevant way, five consumer profiles have been developed, all of which imply a specific usage by the end-user¹⁹. The figure below gives an overview of those profiles.
55. Especially profile 2 (average caller, mainly in the evening and during the weekend) is strongly present on the market and therefore representative of a large selection of the population. Indeed, the active population mostly calls during off-peak hours. Data collected by BIPT show that an average caller calls about 222 minutes a month, which is slightly less than the number of minutes defined in profile 2. Profiles 4 and 5 are very extreme and therefore only apply to a small part of the population. The same goes for profile 1, which is light.

Profile 1: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%

Profile 2: Medium use, off-peak and during the weekend (70 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	53	30%	30%	40%
25%	Mobile	17	35%	25%	40%

¹⁹ The profiles have been developed to reflect consumer usage on the Belgian market and to apply it to tariff plans abroad. When choosing these profiles the main fixed operators on the Belgian market have been consulted with. The choice of the profiles and their parameters has a big influence on the results of the price level comparison.

Profile 3: Medium use, week during the day (70 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	53	60%	20%	20%
25%	Mobile	17	60%	20%	20%

Profile 4: Heavy use, off-peak and during the weekend (120 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	90	30%	30%	40%
25%	Mobile	30	35%	25%	40%

Profile 5: Heavy use, mainly during the day during the week (120 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	90	60%	20%	20%
25%	Mobile	30	60%	20%	20%

Figure 8: List of fixed telephony profiles.

56. These profiles have been applied to all tariff plans in the figure above. After having applied a certain profile to all tariff plans of an operator, it was examined - for each operator - which tariff plan was cheapest for that particular profile. The cheapest offer for each operator for a certain profile has been included in the price comparison.

Choice of fixed telephony operators

57. The figure below lists the operators and their tariff plans that have been taken into consideration for fixed telephony. In total, for the five countries 13 operators are involved and overall, 47 tariff plans have been analysed.

Country	Operator	Tariff Plan
BE	Belgacom	Belgacom Happy Time XL
		Belgacom Classic
		Belgacom Classic avec "No Limit National"
	Telenet	Telenet Freephone Europe
		Telenet Freephone Europe avec "24 Belgium"
		Telenet Freephone Europe avec "FreePhone Mobile 24"
	VOO	Telenet Freephone Europe avec "FreePhone Mobile 24" et "24 Belgium"
		VOO Le Téléphone Eco Soir & W-E
		VOO Le Téléphone Blabla 24h/24h
	Numericable	VOO Le Téléphone Eco Soir & W-E avec "Fixe à Mobile"
		VOO Le Téléphone Blabla 24h/24h avec "Fixe à Mobile"
Numericable Téléphone Classic		
Numericable Téléphone Extra		
NL	KPN	KPN BelVrij Altijd
		KPN BelVrij Avond & Weekend
		KPN BelVrij Weekend
	Tele2	Tele2 Vaste Telefonie
		Tele2 Onbeperkt Bellen Weekend
		Tele2 Onbeperkt Bellen Avond & Weekend
		Tele2 Onbeperkt Bellen Altijd
UK	BT	BT Weekend
		BT Evening & Weekend
		BT Anytime
	TalkTalk	TalkTalk Evening & Weekend
		TalkTalk UK Anytime
		TalkTalk Evening & Weekend avec "Mobile Extra"
	Sky	TalkTalk UK Anytime avec "Mobile Extra"
		Sky Talk Weekends
FR	Orange	Sky Talk Anytime UK
		Orange Atout
		Orange 2H Fixes et Mobiles
		Orange 4H Fixes et Mobiles
	SFR	Orange Illimité Fixes et Mobiles
		SFR Ligne Fixe Abonnement Seul
		SFR Ligne Fixe 2H
		SFR Ligne Fixe 3H
		SFR Ligne Fixe 5H
		SFR Ligne Fixe Illimité
DE	Deutsche Telekom	Deutsche Telekom Call Start
		Deutsche Telekom Call Plus
		Deutsche Telekom Call Basic
		Deutsche Telekom Call Comfort
		Deutsche Telekom Call Start avec "Festnetz zum Mobil"
		Deutsche Telekom Call Basic avec "Festnetz zum Mobil"
		Deutsche Telekom Call Comfort avec "Festnetz zum Mobil"
		Vodafone
	Vodafone Komfort-Anschluss	
	Vodafone Komfort-Anschluss avec "Festnetz Flat"	

Figure 9: list of all tariff plans included for fixed telephony.

3.4 Broadband Internet

Cost calculation broadband Internet

58. The cost of a broadband Internet tariff plan comprises the following monthly recurrent costs - if applicable:
 - the subscription;
 - line rental (i.e. the cost a customer has to pay to have a broadband or fixed telephony line at his disposal, apart from his subscription fee);
 - rental of equipment or once-only purchase of the equipment if the purchase is cheaper (equipment is written down over a period of 36 months).
59. Once-only costs, such as installation and activation, have not been taken into consideration. Extra tariffs for additional services have also been left out.
60. The broadband Internet section only relates to offers with which Internet access can be obtained. If the rental of a fixed telephone line is necessary, but no specific fixed telephony arrangements have been provided for (in other words calling is only possible at standard rates), the product is still considered to be a *stand-alone* broadband offer. In such cases in the commercial offer no attention is paid to the fixed telephony aspect.
61. The importance of *stand-alone* broadband Internet is diminishing: consumers increasingly choose to purchase several telecom products in a bundle from a single operator (see topic 6 in chapter 13). Therefore, not all Internet operators still have a pure *stand-alone* Internet offer. Because of that trend BIPT finds that stand-alone Internet has become less relevant within the context of this study - the result of which is the extension and the more in-depth treatment of the section on multiple play offers.

Explanation about the broadband Internet product categories

62. Internet offers not only differ from each other in terms of price, but also in terms of speed, and therefore, quality. To compare Internet offers, they are grouped based on download speed and volume limitations, if any.
63. As for download speed BIPT has started from the speed advertised. This creates a problem, however: the speed advertised regularly deviates from the real speed experienced by the end-user. This depends on a number of factors such as the number of users making simultaneous use of the Internet and the distance to the exchange (see topic 2 in chapter 13). The advertised speed can be seen as the maximum speed obtainable. The reader should be aware of the difference between the advertised speed and the real download speed.
64. Moreover, Internet offers are more and more differentiated based on additional quality characteristics (e.g. free mobile Internet, extension with interactive services, etc.). Even products with similar speed and volume may differ considerably because of other elements. This makes an objective comparison purely based on download speeds especially difficult.

65. As to profiling BIPT has opted for a mixed approach, differentiating on the basis of both the download speed advertised and the download volume allowed in the standard offer, as indicated in the table below.

Profile 1: Low speed	Speed < 30 Mbps Volume undetermined
Profile 2: Average speed	30 Mbps ≥ Speed < 100 Mbps Volume ≥ 100 GB
Profile 3: Average speed, no volume limitation	30 Mbps ≥ Speed < 100 Mbps No download limit
Profile 4: High speed	Speed ≥ 100 Mbps No download limit

Figure 10: Overview of the broadband Internet product categories

66. In this comparison categories 2 and 3 have been joined each time. The reason is that a volume limitation (as opposed to unlimited volume use) practically only exists in Belgium. In the four neighbouring countries broadband subscriptions often have no download limits. As a consequence, the comparison for category 2 would not lead to any results in other countries.
67. Tariff plans that do not meet the characteristics mentioned above, have not been taken into account²⁰. Broadband offers with a download speed under 1 Mbps have not been included in this study²¹.
68. If - within one and the same product category - several tariff plans apply from a single operator, the cheapest tariff plan has been chosen. Tariff plans excluded from the price comparison, are mentioned in the basic overview, though. This way the reader gets an idea of the qualitative differentiation of the Internet offers within the same technology used²².

Choice of broadband Internet operators

69. The figures below list the operators and their tariff plans that have been examined for broadband Internet. In total, 12 operators are involved, who together offer 30 tariff plans.

²⁰ That is the case for the offers Numericable "Internet 100 Mega" (download speed of 100 Mbps and volume limit of 100 GB), "BT Infinity 1" and "BT Infinity 1 & TV Essential Extra".

²¹ That is the case for the "bas débit" products of Orange and the Free "accès gratuit" and "50H" offers in France.

²² Various operators in the comparison group apply an identical speed (and therefore technology) for all of their offers. However, the prices are different, based on download limit or extra advantages (e.g. free use of music service).

70. Not all operators have complete geographical coverage; they may for instance only focus on urban areas or on specific regions. Consequently not all tariff plans are available to all the inhabitants of a certain country.

Country	Operator	Tariff Plan
BE	Belgacom	Belgacom "Internet Overal/Partout Start" 50
		Belgacom "Internet Overal/Partout Comfort" 50
		Belgacom "Internet Overal/Partout Maxi" 50 (P3)
	Numericable	Numericable "Internet 100 Mega" 100
		Numericable "Internet 200 Mega" 200
		Numericable "Internet 50 Mega" 50
	Telenet	Telenet "Basic Internet" 30
		Telenet "Internet" 120
		Telenet "Internet" 60
	VOO	VOO "Fiber 100" 100
		VOO "Internet Beaucoup" 40
		VOO "Internet un Peu" 30
		VOO "Internet Passionnement" 50 (P3)
VOO "Internet A la Folie" 70 (P3)		
VOO "Internet A la Folie" 70 (P3)		
DE	1&1	1&1 "Surf-Flat 6.000" 6
		1&1 "Surf-Flat 6.000" 6
	Unitymedia (Kabel BW)	Unitymedia "Internet 10" 10
		Unitymedia "Internet 100" 100
FR	Bouygues	Bouygues "BBOX Internet Seul" (zone dégroupée) 20
	Orange	Orange "Livebox Découverte" 8
	SFR	SFR "Internet Seul" (zone degroupée) 25
		SFR "Internet Seul" (zone non degroupée) 8
NL	KPN	KPN "Internet Instap" 8
		KPN "Internet Standaard" 40 (P3)
		KPN "Internet Premium" 80 (P3)
	Tele2	Tele2 "Internet" 20
		Tele2 "Internet" 50 (P3)
UK	Virgin Media	Virgin Media "Up to 100Mb broadband" 100
		Virgin Media "Up to 30Mb broadband" 30 (P3)
		Virgin Media "Up to 60Mb broadband" 60 (P3)

Figure 11: list of all tariff plans included for broadband Internet.

3.5 Mobile Internet

Cost calculation mobile Internet

71. When determining the monthly recurrent cost of the tariff plans for postpaid mobile Internet, account has been taken of the following elements:
 - the monthly subscription fee that is due and the mobile data included in that fee.
72. The comparison only relates to postpaid subscriptions for laptops and tablets. Prepaid formulas have been left out. Tariffs with data for *smartphones*, where SMS messages and voice are included, are included in the mobile telephony section.
73. Account has only been taken of *stand-alone* data limits and not with the offer of free volume over Wi-Fi or hotspots for clients who already have a broadband subscription. Other possible quality parameters such as download speed and network coverage (regional or national) have also been left out. Yet, the quality elements are important in the evaluation of a subscription formula. See topic 5 in chapter 13 for more information.
74. No account has been taken of promotions giving a temporary reduction on the monthly subscription fee for new customers. Abroad the price of the tariff plan sometimes depends on the contract duration. In that case the longest possible contract duration was opted for.
75. Once-only charges, such as the purchase or activation of a SIM card or dongle (for a laptop), have been left out of consideration.
76. Conditional sales, where subscription formulas are offered in combination with the sale of a tablet or laptop, have been left out.

Explanation about the mobile Internet product categories

77. For the purpose of the comparison product categories have been established according to the mobile Internet volume included in a tariff plan. This corresponds with the methodology used by the OECD in its comparative study. In order to align the product categories with the Belgian products, the sector has been asked to give input. Next BIPT arrived at the following four product categories:

Profile 1: Low use	$200 < \text{volume} \leq 500 \text{ MB}$
Profile 2: Medium use, medium volume	$500 \text{ MB} < \text{volume} \leq 1 \text{ GB}$
Profile 3: Medium use, high volume	$1 \text{ GB} < \text{volume} \leq 2 \text{ GB}$
Profile 4: Intensive use	$2 \text{ GB} < \text{volume} \leq 5 \text{ GB}$

Figure 12: Overview of the mobile Internet product categories

78. In Belgium there are no postpaid tariff plans offering a volume of less than 200 MB or more than 5 GB.
79. Foreign tariff plans offering a volume of less than 200 MB or more than 5 GB have not been included in this study. That is the case for “Vodafone Instap 200 MB (NL)”, “T-mobile Internet 10 GB (NL)”, “Vodafone Sim only 10 GB (UK)”, “EE Mobile Broadband 8 GB (UK)”, “Three Broadband 10 GB (UK)”, “Orange Let’s go 10 Go (FR)”, “SFR 6 Go (FR)”, “Bouygues Telecom 10 Go (FR)”, “Deutsche Telekom CombiCard Mobile Data 10 GB (DE)”, “Deutsche Telekom CombiCard Mobile Data 30 GB (DE)”, “Vodafone Mobileinternet Flat 6 GB (DE)”, “Vodafone Mobileinternet Flat 10 GB (DE)”, “O2 Go + Surf Flat 7,5 GB (DE)”, “O2 Go + Surf Flat 10 GB (DE)”.
80. If - within one and the same product category - several tariff plans apply from a single operator, the cheapest tariff plan has been chosen.

Choice of mobile Internet operators

81. The figure below list the operators and their tariff plans that have been examined for mobile Internet. In total, 18 operators are involved, who together offer 56 tariff plans.

Country	Operator	Tariff Plan	
BE	Belgacom	Belgacom Mobile Internet Comfort 2 GB	
		Belgacom Mobile Internet Favorite 4 GB	
	Telenet	Telenet King Surf 500 MB	
		Telenet Kong Surf 2 GB	
	Base	Base Internet Anywhere 1 GB	
		Base Internet Anywhere 2 GB	
		Base Internet Anywhere 5 GB	
	Mobistar	Mobistar Internet Anywhere Regular 1 GB	
		Mobistar Internet Anywhere Unlimited 5 GB	
	NL	KPN	KPN Mobiel Internet Abonnement 500 MB
KPN Mobiel Internet Abonnement 2,5 GB			
KPN Mobiel Internet Abonnement 5 GB			
Vodafone		Vodafone Per Dag	
		Vodafone Instap	
		Vodafone Start 500 MB	
		Vodafone Basis 2 GB	
T-mobile		T-mobile Internet Soms 250 MB	
		T-mobile Internet Regelmatig 1 GB	
		T-mobile Internet Vaak 2,5 GB	
		T-mobile Internet Altijd 10 GB	
UK		Vodafone	Vodafone SIM Only 1 GB UK
			Vodafone SIM Only 2 GB UK
	Vodafone SIM Only 4 GB UK		
	Vodafone SIM Only 10 GB UK		
	O2	O2 1 GB	
		O2 2 GB	
	EE (T-mobile & Orange)	EE Mobile Broadband Plan 1 GB	
		EE Mobile Broadband Plan 3 GB	
		EE Mobile Broadband Plan 5 GB	
		EE Mobile Broadband Plan 8 GB	
	Three	Three Broadband 250 MB	
		Three Broadband 10 GB	
		Three Broadband +12	
	FR	Orange	Orange Let's go 1 Go
Orange Let's go 5 Go 4G/H+			
Orange Let's go 10 Go 4G/H+			
SFR		SFR 3 Go	
		SFR 6 Go	
Bouygues Telecom		Bouygues Telecom BBOX NOMAD 500 Mo	
		Bouygues Telecom BBOX NOMAD 5 Go	
		Bouygues Telecom BBOX NOMAD 10 Go	
DE		Deutsche Telekom	Deutsche Telekom CombiCard Mobile Data S
			Deutsche Telekom CombiCard Mobile Data M
	Deutsche Telekom CombiCard Mobile Data L		
	Deutsche Telekom CombiCard Mobile Data XL		
	Vodafone	Vodafone Mobileinternet Flat 7,2 light	
		Vodafone Mobileinternet Flat 21,6	
		Vodafone Mobileinternet Flat 42,2	
		Vodafone Mobileinternet Flat 50,0	
	E-plus	E-plus Internet Flat M plus	
		E-plus Internet Flat L plus	
		E-plus Internet Flat XL plus	
		E-plus Internet Flat XXL plus	
	O2	O2 Go + Surf Flat M	
		O2 Go + Surf Flat L	
		O2 Go + Surf Flat XL	
		O2 Go + Surf Flat XXL	

Figure 13: list of all tariff plans included for mobile Internet.

3.6 Multiple play

Cost calculation multiple play

82. As for multiple play tariff plans only the following service combinations are treated, broadband being considered as the central element.
- dual play (broadband with fixed telephony);
 - dual play (broadband with television);
 - triple play (broadband, television and fixed telephony);
 - quadruple play offers cover broadband, television, fixed telephony and mobile telephony purchased from the same operator and usually charged by means of a single bill. In some cases the mobile telephony element in the "all in one" offer is presented by the operator as an option, customers having the choice to add one or more mobile telephony subscriptions, usually with a price cut for the (*stand-alone*) mobile telephony subscription. If mobile telephony is offered separately from the bundle with a reduction for existing customers, it is linked to the triple play bundle and also presented as a quadruple play offer.
83. The profiling of the multiple play tariff plans is based on the methodology used for the broadband offers, as described in the section above.
84. Other service combinations (e.g. broadband & mobile telephony or television & fixed telephony) lie outside the scope of this study.
85. The cost of the tariff plan comprises the following monthly recurrent costs - if applicable:
- the subscription fee;
 - the additional costs related to the call minutes (fixed telephony) not included in the subscription²³. The costs of the fixed telephony element have been determined on the basis of 25 calls, which corresponds with basic profile 1 (see section 3.3). In that case no account is taken of fixed telephony options;
 - line rental (i.e. the cost a customer has to pay to have a broadband or fixed telephony line at his disposal, apart from his subscription fee);
 - rental of equipment (e.g. modem and/or decoder) or once-only purchase of the equipment if the purchase is cheaper (equipment is written down over a period of 36 months);
 - for quadruple play offers the subscription fee of the cheapest mobile telephony element is considered if it is not included in the bundle. The number of call minutes, SMS messages and mobile data included, largely varies per tariff plan and operator.

²³ Including set-up charges if applicable.

Choice of multiple play operators

86. Regarding the choice of multiple play operators we refer to the criteria and remarks concerning broadband Internet. The figures below list the operators and tariff plans that have been examined for multiple play. In total, 23 operators are involved, who together offer 218 multiple play tariff plans.

Dual play (broadband with fixed telephony)

Country	Operator	Tariff Plan	
BE	Belgacom	Belgacom "Internet Overal/Partout Start + Telephony" 50	
		Belgacom "Internet Overal/Partout Comfort + Telephony" 50 (P3)	
		Belgacom "Internet Overal/Partout Maxi + Telephony" 50 (P3)	
	Snow	Snow "2-pack Internet en Telefoon" 30 (P3)	
	VOO	VOO "Pack Duo NET TEL Un Peu" 30	
DE	1&1	1&1 "Doppel-Flat 6.000" 6	
		1&1 "Doppel-Flat 16.000" 16	
		1&1 "Surf & Phone Flat Special" 16	
		1&1 "Doppel-Flat 50.000" 50 (P3)	
	Unitymedia (Kabel BW)	Unitymedia "2play SMART" 10	
		Unitymedia "2play PLUS 100" 100	
		Unitymedia "2play PREMIUM 150" 150	
	Deutsche Telekom	Deutsche Telekom "Call & Surf Basic mit Internet-Flatrate" 16	
		Deutsche Telekom "Call & Surf Comfort" 16	
		Deutsche Telekom "Call & Surf Comfort Plus" 16	
		Deutsche Telekom "Call & Surf Comfort Speed" 50	
		Deutsche Telekom "Call & Surf Comfort Speed Fiber 100" 100	
		Deutsche Telekom "Call & Surf Comfort Speed Fiber 200" 200	
	O2 (Telefonica)	O2 "DSL S" 16	
		O2 "DSL M" 16	
		O2 "DSL L" 16	
	Vodafone	Vodafone "DSL Komplettanschluss" 1	
		Vodafone "InternetFlat Paket" 1	
		Vodafone "TelefonFlat Paket" 1	
		Vodafone "DSL Classic Paket" 16	
		Vodafone "DSL Maxi Paket" 16	
FR	Bouygues	Bouygues "BBOX" (zone non dégroupée) 20	
	Free	Free "Freebox (Zones Dégroupées)" 28	
		Free "Freebox (Zones Non Dégroupées)" 22	
		Free "Freebox Révolution (Zones Dégroupées)" 28	
NL	KPN	KPN "Internet en Bellen Glasvezel Premium" 500	
		KPN "Internet en Bellen Glasvezel Standaard" 100	
		KPN "Internet en Bellen Instap" 8	
		KPN "Internet en Bellen Standaard" 40 (P3)	
		KPN "Internet en Bellen Premium" 80 (P3)	
		KPN "Internet en Bellen Glasvezel Instap" 50 (P3)	
		Tele2	Tele 2 "Internet & Bellen" 20
UK	BT	BT "Broadband" 16	
		BT "BT Infinity 1" 38	
		BT "Unlimited Broadband extra" 16	
		BT "Unlimited Broadband" 16	
		BT "Unlimited BT Infinity 1" 38 (P3)	
	Sky	BT "Unlimited BT Infinity 2" 76 (P3)	
		Sky "Broadband Connect" 6	
		Sky "Broadband Unlimited" 16	
	Talktalk	Sky "Fibre Unlimited" 38 (P3)	
		Sky "Fibre Unlimited Pro" 76 (P3)	
	Virgin Media	Talktalk "Essentials" 14	
		TalkTalk "Lite" 14	
		TalkTalk "Plus" 14	
		TalkTalk "Essentials with Fibre" 38 (P3)	
		TalkTalk "Essentials with Fibre" 76 (P3)	
		Virgin Media	Virgin Media "Up to 100Mb broadband + phone" 100
			Virgin Media "Up to 30Mb broadband + phone" 30 (P3)
		Virgin Media "Up to 60Mb broadband + phone" 60 (P3)	

Figure 14: list of all dual play tariff plans included (broadband with fixed telephony).

Dual play (broadband with television)

Country	Operator	Tariff Plan	
BE	Belgacom	Belgacom "Internet Overal/Partout Start + TV" 50	
		Belgacom "Internet Overal/Partout Comfort + TV" 50 (P3)	
		Belgacom "Internet Overal/Partout Maxi + TV" 50 (P3)	
	Numericable	Numericable "Duo [TV + WEB]" 50	
		Snow "2-pack Internet en Digitale TV" 30 (P3)	
		VOO	VOO "Pack Duo TV NET Fiber 100" 100
			VOO "Pack Duo TV NET Un Peu" 30
			VOO "Pack Duo TV NET Beaucoup" 40 (P3)
			VOO "Pack Duo TV NET Passionnement" 50 (P3)
			VOO "Pack Duo TV NET A La Folie" 70 (P3)
NL	KPN	KPN "Internet en TV Glasvezel Premium" 500	
		KPN "Internet en TV Glasvezel Standaard" 100	
		KPN "Internet en TV Instap" 8	
		KPN "Internet en TV Standaard" 40 (P3)	
		KPN "Internet en TV Premium" 80 (P3)	
		KPN "Internet en TV Glasvezel Instap" 50 (P3)	
		Tele2	Tele 2 "Internet & Digitale Televisie" 20
			Tele 2 "Internet & Interactieve Televisie" 20
		UPC	UPC "150Mb Internet" 150
			UPC "60Mb Internet" 60 (P3)
	Ziggo	UPC "100Mb Internet" 60 (P3)	
		Ziggo "TV + Internet Z1" 20	
		Ziggo "TV + Internet Z3" 150	
		Ziggo "TV + Internet Z2" 60 (P3)	
	UK	Sky	Sky "Broadband Unlimited with Sky TV" 16

Figure 15: list of all dual play tariff plans included (broadband with television).

Triple play (broadband with television and fixed telephony)

Country	Operator	Tariff Plan	
BE	Belgacom	Belgacom "Internet Overal/Partout Start + TV + Telephony" 50	
		Belgacom "Internet Overal/Partout Comfort + TV + Telephony" 50 (P3)	
		Belgacom "Internet Overal/Partout Maxi + TV + Telephony" 50 (P3)	
	Numericable	Numericable "Triple Play Start"	
		Numericable "Triple Play Extra"	
		Numericable "Triple Play Max"	
	Snow	Snow "3-pack" 30 (P3)	
	Telenet	Telenet "Whoppa" 120	
		Telenet "Whop" 60	
	VOO	VOO "Pack Trio Fiber 100" 100	
		VOO "Pack Trio Un Peu" 30	
		VOO "Pack Trio Beaucoup" 40 (P3)	
		VOO "Pack Trio Passionément" 50 (P3)	
		VOO "Pack Trio A La Folie" 70 (P3)	
DE	Unitymedia (Kabel BW)	Unitymedia "3play SMART 50" 50 (P3)	
		Deutsche Telekom "Entertain Comfort" 16	
	Deutsche Telekom	Deutsche Telekom "Entertain Premium" 16	
		Vodafone	Vodafone "DSL plus IP-TV Paket" 16
FR	Bouygues	Bouygues "BBOX Sensation Fibre" 100	
		Bouygues "BBOX" (zone dégroupée) 20	
		Bouygues "BBOX Sensation" (zone dégroupée) 20	
	Free	Free "Freebox Révolution (Zones Dégroupées) avec TV" 28	
		Free "Freebox (Zones Dégroupées) avec TV" 28	
	Numericable	Numericable "Essentiel" 20	
		Numericable "iStart" 20	
		Numericable "Max" 20	
		Numericable "Start by Numericable" 20	
		Orange	Orange "Livebox Play Fibre" 200
			Orange "Livebox Play" 20
	Orange "Livebox Zen Fibre" 100		
	SFR	Orange "Livebox Zen" 20	
		SFR "La Box de SFR" (zone dégroupée) 25	
		SFR "La Box de SFR" (zone non dégroupée) 25	
	NL	KPN	KPN "Internet, Bellen en TV Glasvezel Premium" 500
			KPN "Internet, Bellen en TV Glasvezel Standaard" 100
			KPN "Internet, Bellen en TV Instap" 8
			KPN "Internet, Bellen en TV Standaard" 40 (P3)
KPN "Internet, Bellen en TV Premium" 80 (P3)			
KPN "Internet, Bellen en TV Glasvezel Instap" 50 (P3)			
KPN "Internet, Bellen en TV Premium" 80 (P3)			
Tele2		Tele 2 "Digitale Televisie, Internet & Bellen" 20	
		Tele 2 "Interactive TV, Internet & Bellen" 20	
UPC		UPC "Alles-in-1 Extreme Power" 200	
		UPC "Alles-in-1 Power" 100	
		UPC "Alles-in-1 Basis" 30 (P3)	
		UPC "Alles-in-1 Standaard" 60 (P3)	
Ziggo	Ziggo "Alles-in-1 Basis" 20		
	Ziggo "Alles-in-1 Extra" 150		
	Ziggo "Alles-in-1 Plus" 60 (P3)		
UK	BT	BT "Broadband & TV Essential" 16	
		BT "BT Infinity 1 & TV Essential Extra" 38	
		BT "Unlimited Broadband & TV Essential" 16	
		BT "Unlimited Broadband extra & TV Essential" 16	
		BT "Unlimited BT Infinity 1 & TV Essential Extra" 38 (P3)	
		BT "Unlimited BT Infinity 2 & TV Essential Extra" 76 (P3)	
	Sky	Sky "Broadband Lite" 16	
		TalkTalk	TalkTalk "PlusTV, broadband and phone" 14
	Virgin Media	TalkTalk "PlusTV with Fibre" 38 (P3)	
		Virgin Media "VIP" 100	
		Virgin Media "Up to 30Mb broadband + phone & Free TV and Free TiVo" 30 (P3)	
		Virgin Media "Essential" 30 (P3)	
		Virgin Media "Up to 60Mb broadband + phone & Free TV and Free TiVo" 60 (P3)	
	Virgin Media "Premiere" 60 (P3)		

Figure 16: list of all triple play tariff plans included.

Quadruple play (broadband with television, fixed and mobile telephony)

87. Mobile telephony is increasingly being offered as part of a bundle of telecom products. In combination with a classical triple play this bundle is called a quadruple play. Comparing quadruple play offers is very complex considering the various characteristics of the four services included in the bundle (Internet speed, number of call minutes for fixed and mobile telephony included, number of SMS messages and mobile data included, number of TV channels, etc.).
88. That is why BIPT chooses not to subdivide the quadruple play offers observed into product categories. The cost calculation for the broadband and fixed telephony elements is similar to the one applied to triple play offers. For fixed telephony this means that the cost for profile 1 use is included in the total price.
89. As for the mobile telephony element, only the cheapest mobile subscription has been added to the triple play if mobile communication is not included in (the cost price of) the standard quadruple play offer. Any discounts for adding this mobile service to the bundle have been deducted from the price²⁴. In figure 75 a short description is given of the number of call minutes, SMS messages and mobile data included for this subscription.
90. The list of quadruple play offers in chapter 12 is not exhaustive. They are both offers explicitly commercialised by the operators as a quadruple play and triple play offers to which a mobile element is added offered by the same operator. It is of no importance whether those products are billed separately or not.

²⁴ In the BIPT tariff simulator a quadruple play offer is defined as a single product, which has to be presented as a quadruple play on the operator's website. A combination of a triple play with a discount on the mobile element is not included in the tariff simulator as a quadruple play.

3.7 General points of interest and limitations

91. Telecom products are practically never identical. Although they can be grouped according to certain qualities, they will always differ in terms of price composition, additional services and other characteristics. This does not make it easy to draw conclusions about objectively observable price differences. If the price comparison shows that a specific product A has a lower price than another product B, it does not automatically mean that product B is more adverse for each customer. Indeed, because of the large variety in the composition of telecom products product B may be more advantageous for a particular group of consumers, because qualitative elements (e.g. free Wi-Fi, extra TV channels, ...) also have a specific economic use for the end-user. In this price comparison those qualitative aspects of a tariff plan are left out of consideration.
92. The study has a few limitations resulting from methodological choices made in order to be able to compare all tariff plans from the various countries:
 - 92.1. **Representativeness:** when selecting the operators BIPT has striven for maximum representativeness of the analysed markets. For practical reasons only the major operators have been analysed. This does not alter the fact that sharper prices are available in a country, for instance from smaller operators or resellers. The operators included in this study always constitute together about 80 to 90 per cent of the total market for a specific product category in a specific country. BIPT thinks that this choice best represents what the general price level of the products most bought is.
 - 92.2. **Rational consumer:** for comparing the products analysed the end-user has been assumed to choose the cheapest offer available from a specific operator, fitting his/her calling behaviour of Internet usage. In other words the end-consumer is assumed to make a rational choice, with full knowledge of the tariff structure, and to choose the product that is most favourable for his or her usage. This implies a large measure of tariff transparency, consumer awareness and willingness to compare prices. In practice consumers are often not willing to calculate exactly what the cheapest telecom product for them is.
 - 92.3. **Differences in tariff structure:** because of the often diverging tariff structures in the various countries choices have to be made regarding the charges to consider. Indeed, sometimes certain costs charged in one country, do not exist in the other. On the other hand it is particularly difficult to find out how much importance an end-user attaches in a specific country to services for which he has to pay extra. Therefore, BIPT has opted to use a realistic representation of the end-user's monthly recurrent cost, although it is definitely not comprehensive.
 - 92.4. **Commercialised tariff plans:** because of methodological reasons this study only covers tariff plans commercialised in the course of August 2013 on operator websites. Apart from those tariff plans there is a whole range of 'old' tariff plans, which are no longer marketed, but still purchased by customers. Those old tariff plans are often more expensive.
 - 92.5. **National coverage:** some services included in this comparison are not available nation-wide. Indeed, certain operators have partial territorial coverage (regional

coverage, municipal coverage, local coverage, ...). Especially very high-speed broadband Internet is concentrated in the big conurbations in certain countries.

- 92.6. **Contract duration:** the price of a tariff plan depends on the contract duration. The monthly fee of a tariff plan with a two-year contract duration is often lower than the price a consumer would pay if he commits to one year, because the inherent value of a commitment with a fixed duration is reflected in the price of the subscription. If the price of a tariff plan depends on the contract duration, in this comparison the longest contract duration has been selected. However, this 'long-term' perspective has an influence on the price level observed in each country. In Belgium a consumer can cancel his contract after six months free of charge, as laid down in the Telecom Act of 13 June 2005. In Belgium's neighbouring countries the minimum contract duration is typically one or two years. In fact the Belgian operators are therefore at a disadvantage in this comparison. This applies to all segments in this study (mobile telephony, fixed telephony, broadband and bundles).
93. The limitations described above have to be considered when interpreting the results obtained. Although a price comparison - such as the one in this study - can give an overall picture of the Belgian price level compared to its neighbouring countries, it is not possible to make a comparative study of telecom tariffs that gives a comprehensive and indisputable picture of the price level across countries. Moreover, BIPT points out that this study gives a static analysis of the price level. This means that in a certain time frame (August 2013) the tariff plans made available at the time by the operators analysed, were observed. Since those tariff plans are strongly dependent on various changes (both regarding price level and other characteristics) it is possible that after the analysis period other tariff plans and/or price levels can be observed at the operators investigated.
94. Apart from this international price study BIPT regularly publishes a document giving an overview of all Belgian tariff plans, classified according to price. Because the national price comparison contains a larger sample of operators the document is better suited for comparing the operators than this international price study.
95. A consumer can easily find out for himself which tariff plan is best suited for his needs by entering his user profile in the BIPT tariff simulator. www.besttariff.be.

3.8 Structure of the following chapters

96. In the next nine chapters the results are presented for each of the nine product groups (the sixth product group, multiple play, is divided into four subgroups, namely dual play with fixed telephony, dual play with television, triple play and quadruple play). Except for the last chapter the structure of these chapters is identical regardless of the choice for user profiles or product categories, even though there is an influence on what is presented in the country comparison graph.
97. For each user profile or product category there is:
 - a schematic representation of the characteristics of that user profile and product category;
 - a provider comparison graph with the position of the most advantageous tariff plan of the domestic and foreign providers;
 - a country comparison graph with for each country:
 - for user profiles the weighted country average classified according to that average;
 - for product categories the median and the range between the highest and the lowest price, classified according to that median.
98. At the end of each section the results are summarised and the Belgian tariff plans are positioned graphically. In this figure the cheapest tariffs of the Belgian operators included in the comparison are positioned against the cheapest tariffs analysed in the neighbouring countries. The black arrow - which shows per profile/category the price range of all tariffs collected - links the minimum tariff (bottom of the arrow) to the maximum tariff (top of the arrow). Each red rhomb represents an observed price level of a Belgian offer. The lower the red rhombs are situated on a vertical arrow, the better the Belgian offers are priced compared to the neighbouring countries. In a few cases the red rhombs are widely scattered over the arrow: in that case it is harder to draw an unambiguous conclusion about the Belgian tariffs.
99. Because of the diversity of quadruple play offers the option has been made not to subdivide this product group (see sections 88 and 90). As a consequence representing the price level in a graph and a comparison with the various countries make less sense. Instead that chapter only gives a table indicating the results found for all providers in all countries concerned.

4 MOBILE TELEPHONY (POSTPAID)

4.1 Profile 1: Few calls (no data)

Profile 1: Few calls (no data): 60 call minutes, 50 SMS messages, no data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	50	-
60%	On-net	36 minutes	9 minutes	14 minutes	13 minutes		
40%	Off-net	24 minutes	6 minutes	10 minutes	8 minutes		
Total		60 minutes	15 minutes	24 minutes	21 minutes		

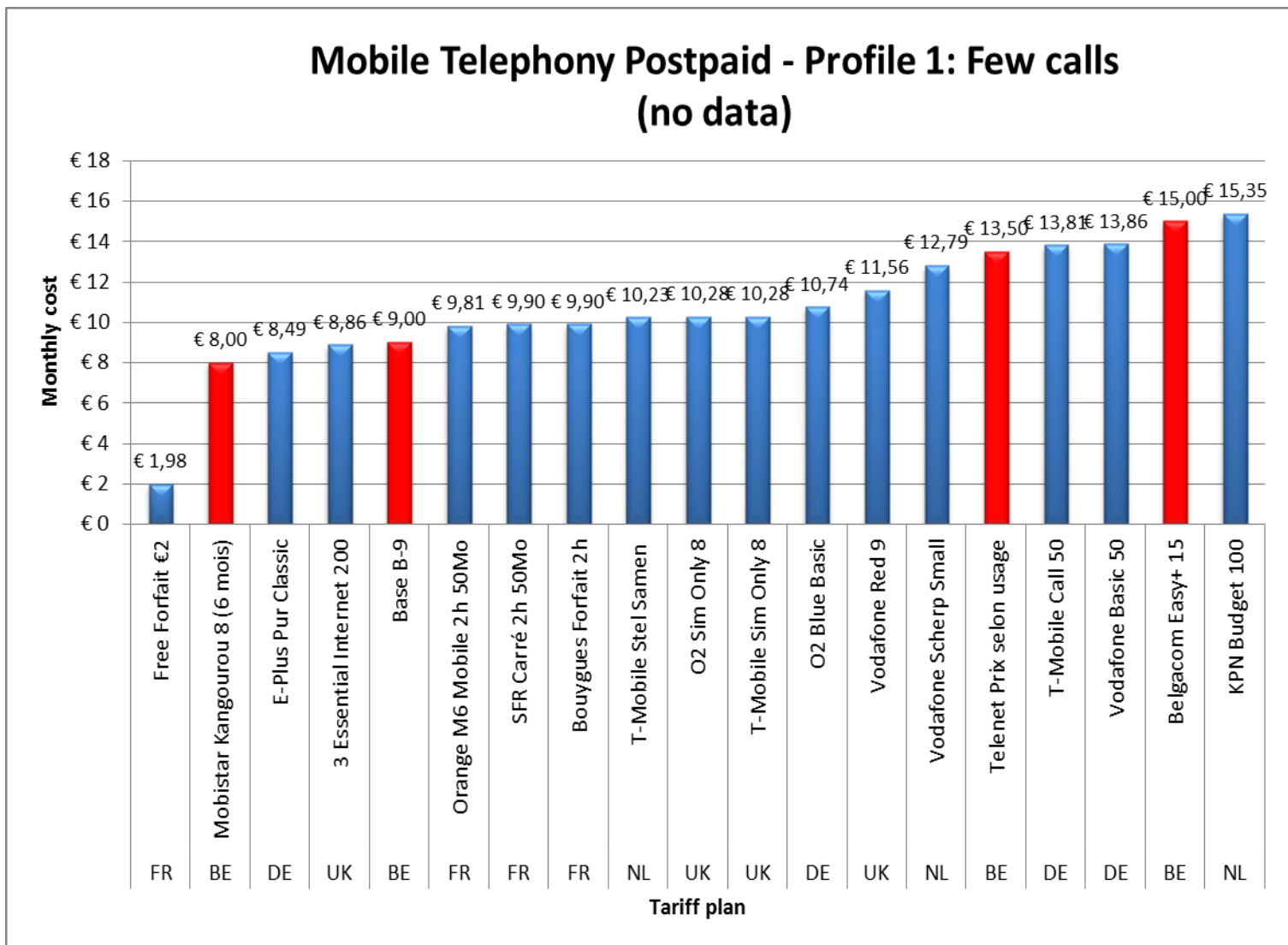


Figure 17: Comparison tariff plans for postpaid mobile telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

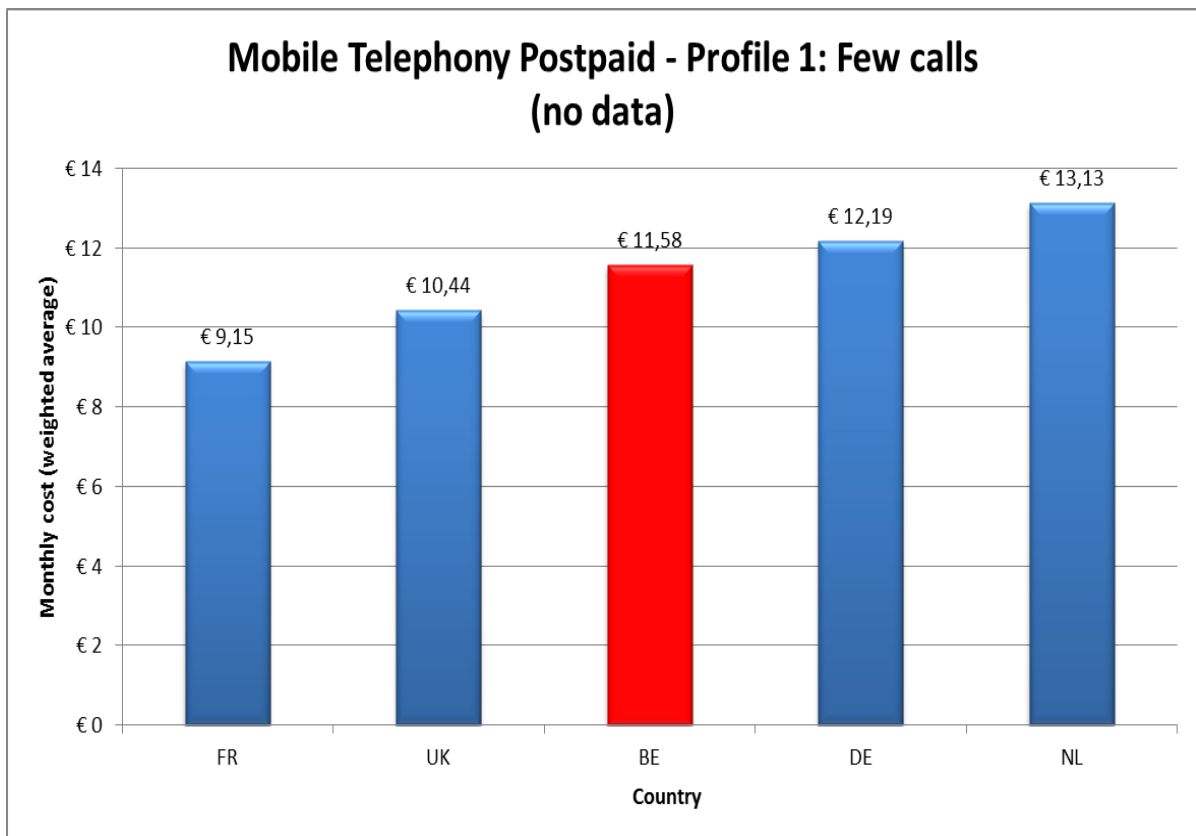


Figure 18: Weighted average per country for postpaid mobile telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.2 Profile 2: Average calls (no data):

Profile 2: Average calls (no data): 120 call minutes, 100 SMS messages, no data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	100	-
60%	On-net	72 minutes	18 minutes	28.8 minutes	25.2 minutes		
40%	Off-net	48 minutes	12 minutes	19.2 minutes	16.8 minutes		
Total		120 minutes	30 minutes	48 minutes	42 minutes		

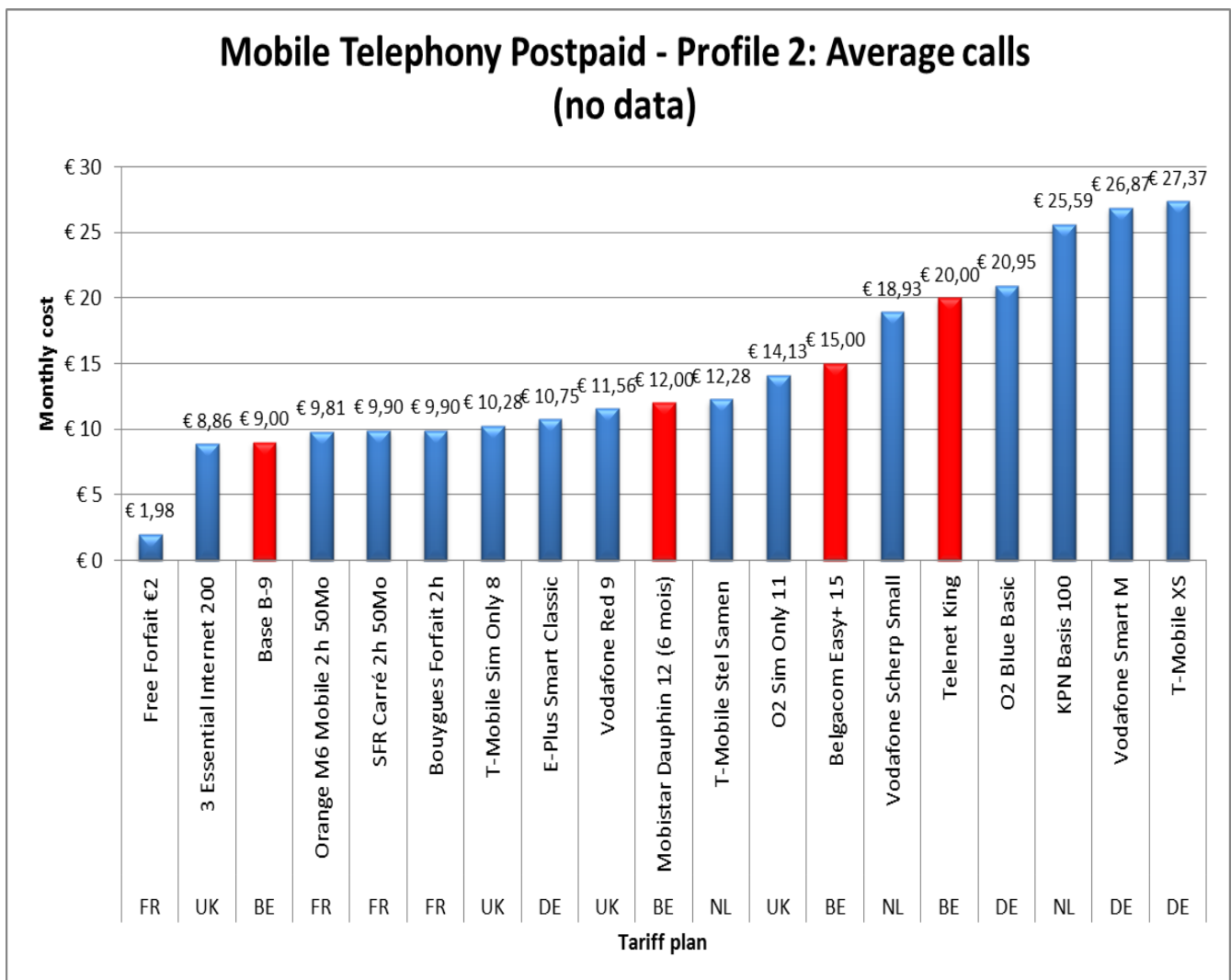


Figure 19: Comparison tariff plans for postpaid mobile telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

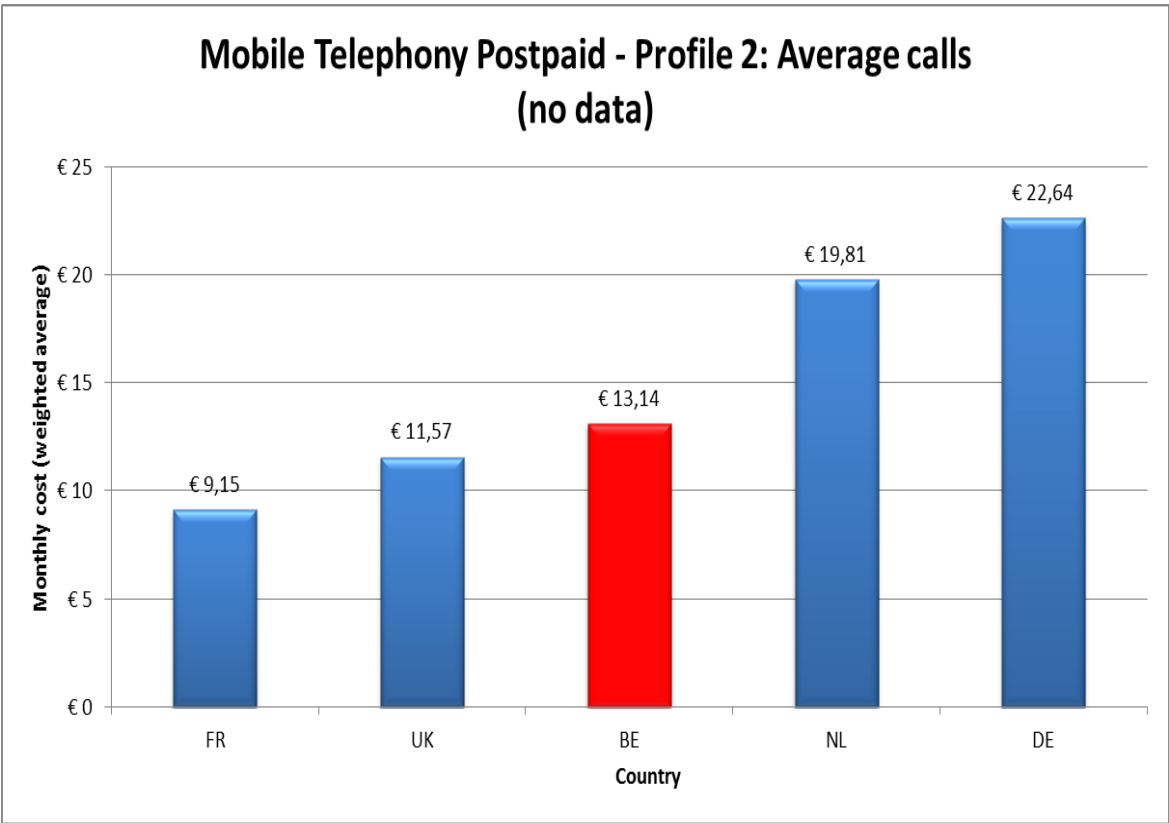


Figure 20: Weighted average per country for postpaid mobile telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.3 Profile 3: Few calls (a lot of data)

Profile 3: Few calls (a lot of data): 60 call minutes, unlimited SMS messages, 500 MB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	Unlimited	500 MB
60%	On-net	36 minutes	9 minutes	14.4 minutes	12.6 minutes		
40%	Off-net	24 minutes	6 minutes	9.6 minutes	8.4 minutes		
Total		60 minutes	15 minutes	24 minutes	21 minutes		

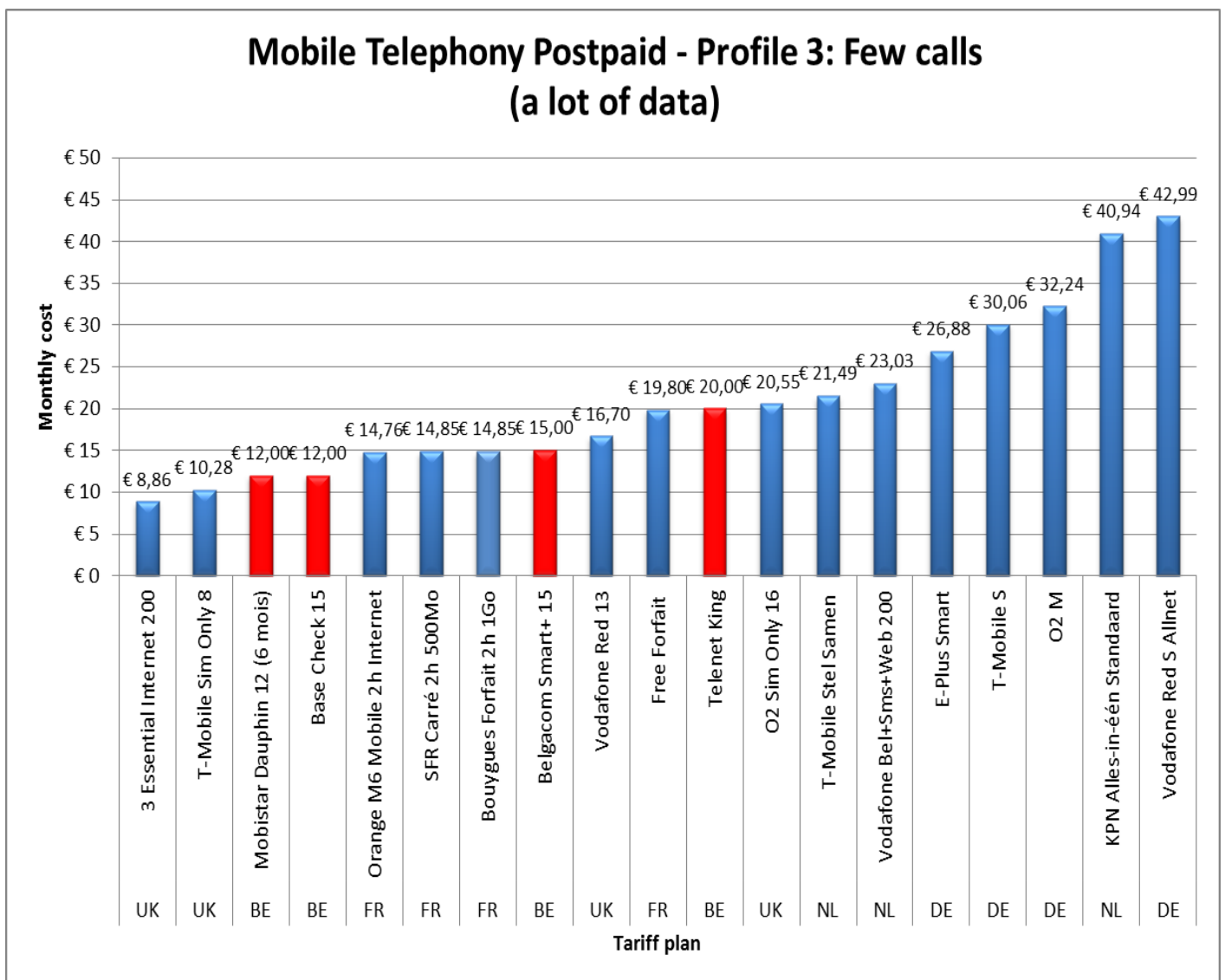


Figure 21: Comparison tariff plans for postpaid mobile telephony profile 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

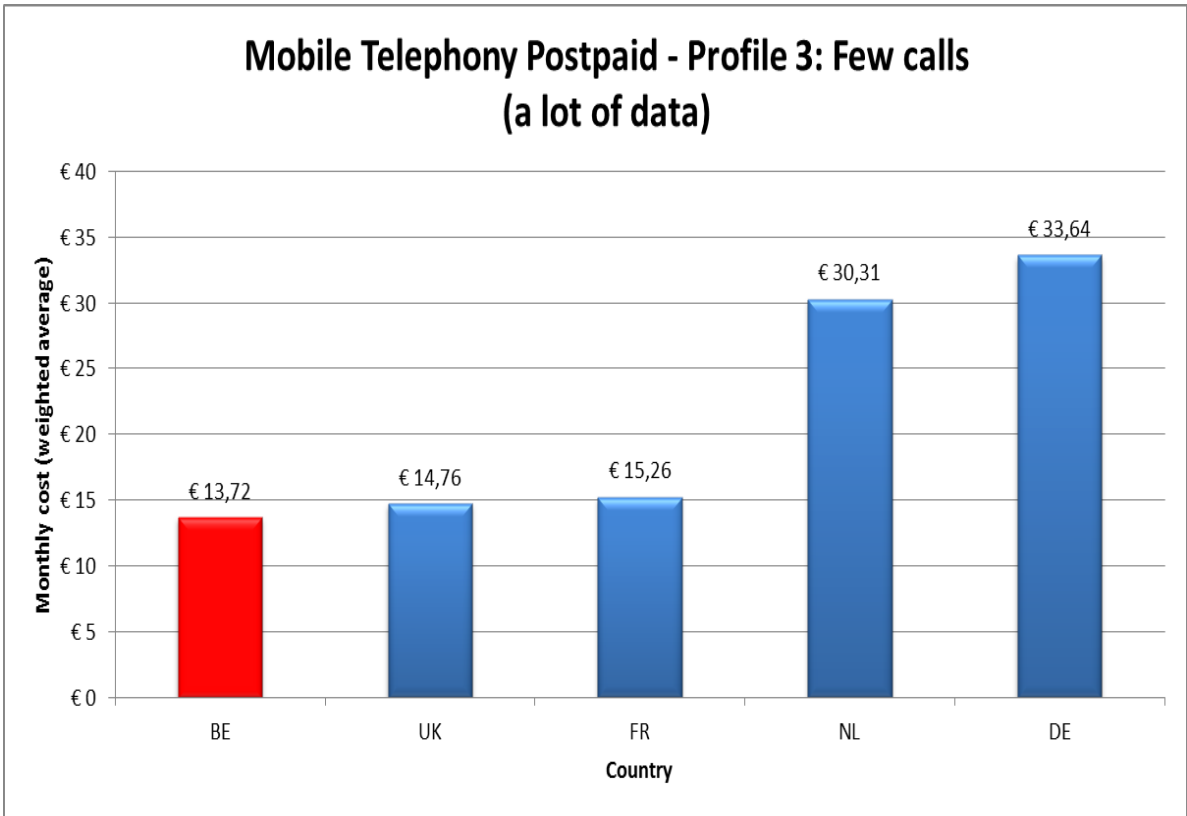


Figure 22: Weighted average per country for postpaid mobile telephony profile 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.4 Profile 4: Average calls (with data)

Profile 4: Average calls (with data): 120 call minutes, 100 SMS messages, 50 MB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	100	50 MB
60%	On-net	72 minutes	18 minutes	28.8 minutes	25.2 minutes		
40%	Off-net	48 minutes	12 minutes	19.2 minutes	16.8 minutes		
Total		120 minutes	30 minutes	48 minutes	42 minutes		

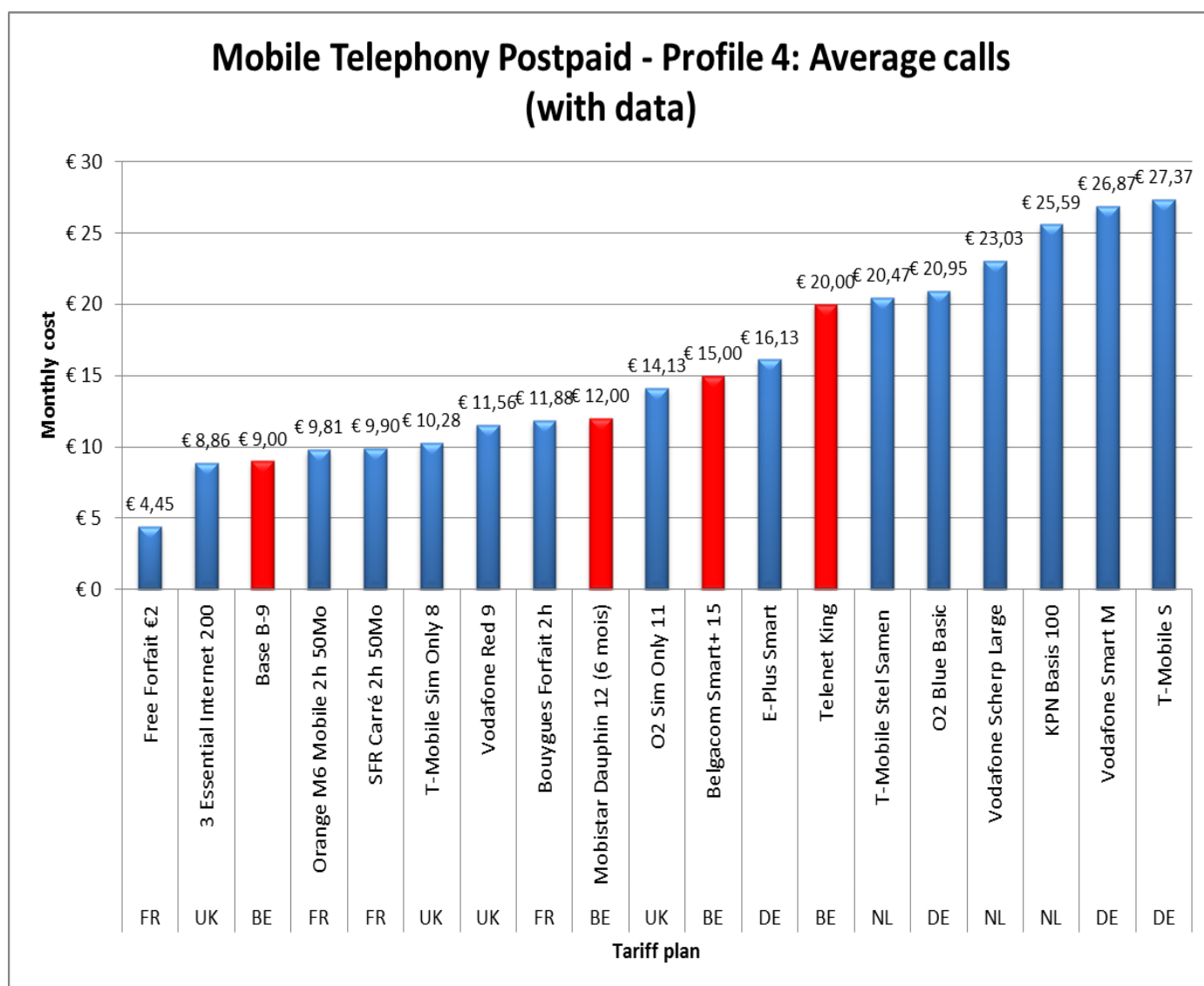


Figure 23: Comparison tariff plans for postpaid mobile telephony profile 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

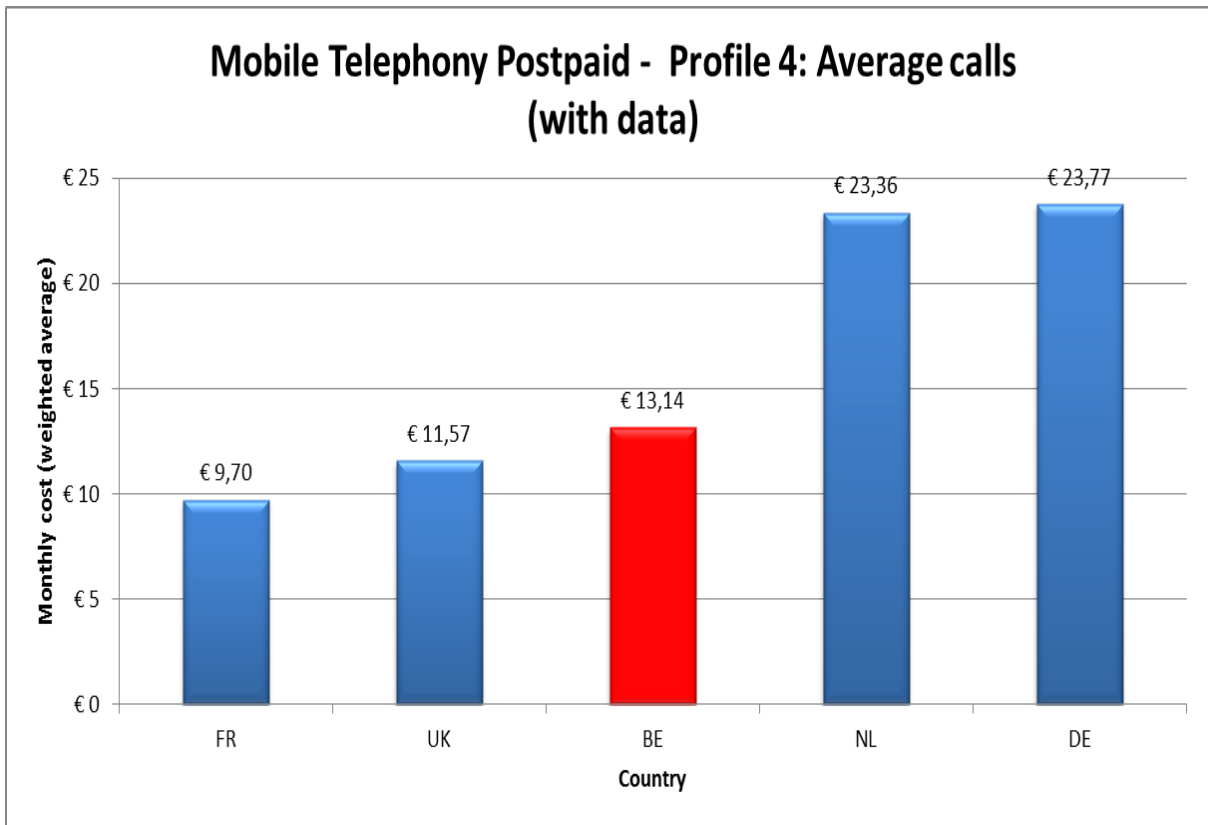


Figure 24: Weighted average per country for postpaid mobile telephony profile 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.5 Profile 5: Average calls, off-peak (with data)

Profile 5: Average calls, off-peak (with data): 100 call minutes, 100 SMS messages, 100 MB							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			10%	60%	30%	100	100 MB
60%	On-net	60 minutes	6 minutes	36 minutes	18 minutes		
40%	Off-net	40 minutes	4 minutes	24 minutes	12 minutes		
Total		100 minutes	10 minutes	60 minutes	30 minutes		

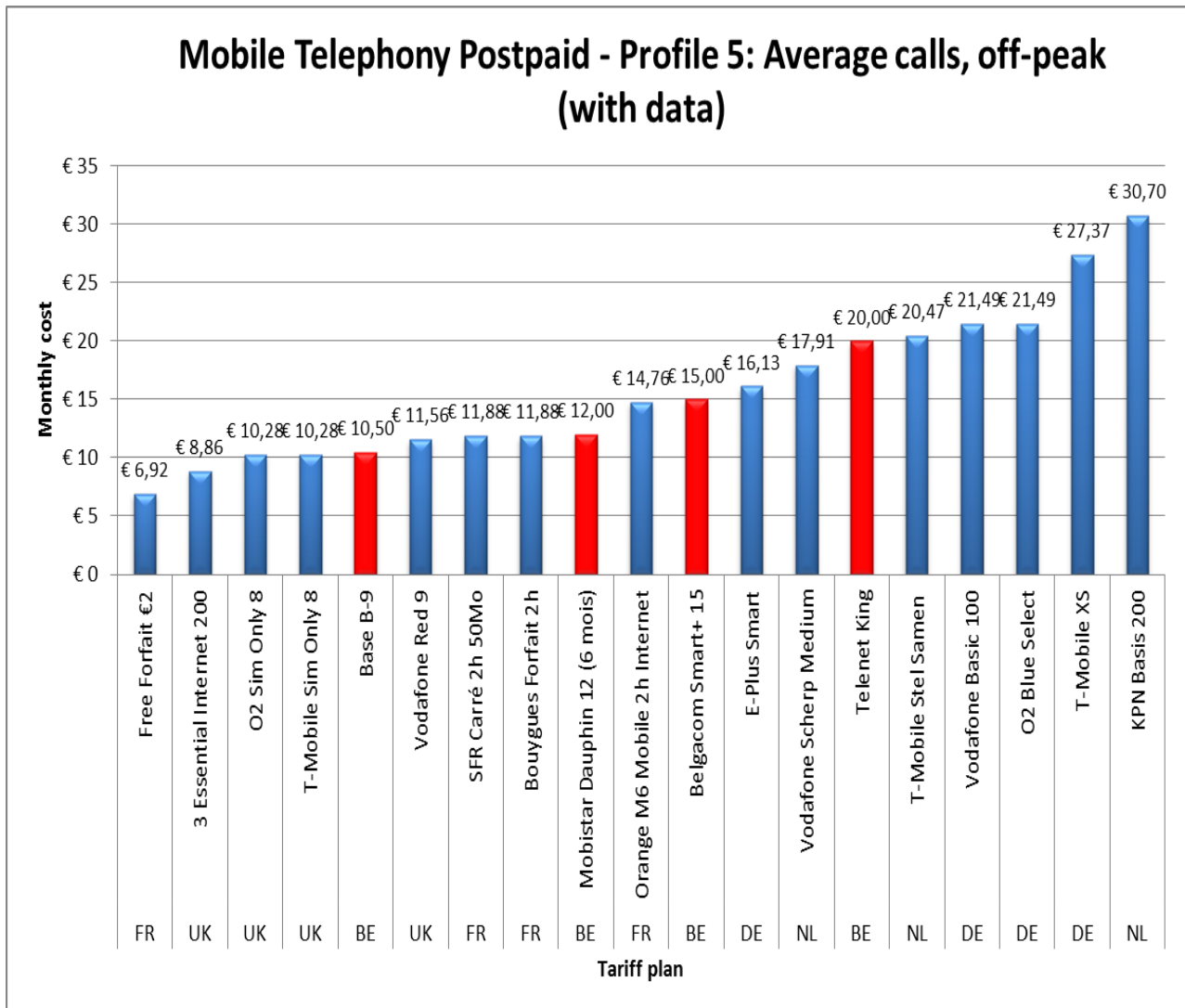


Figure 25: Comparison tariff plans for postpaid mobile telephony profile 5 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

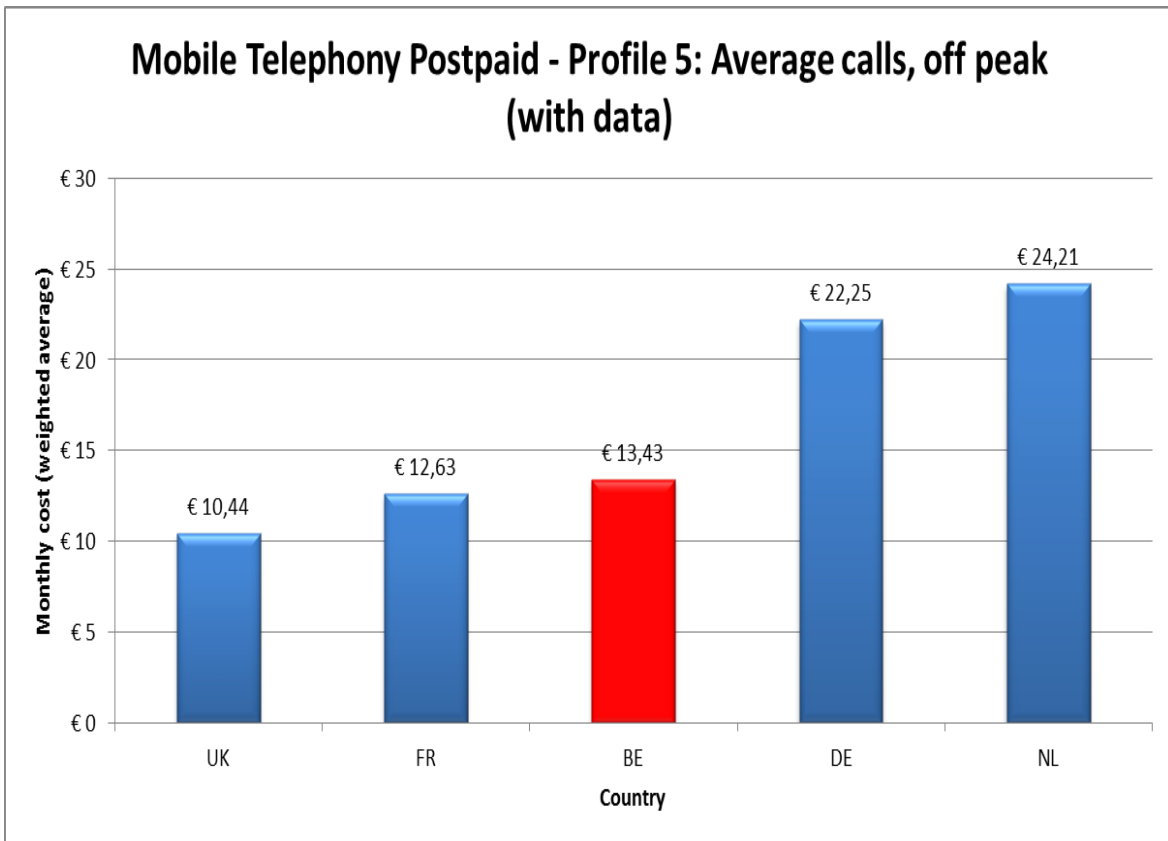


Figure 26: Weighted average per country for postpaid mobile telephony profile 5 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.6 Profile 6: Many calls (a lot of data)

Profile 6: Many calls (with data): 300 call minutes, unlimited SMS messages, 1 GB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			25%	40%	35%	Unlimited	1 GB
60%	On-net	180 minutes	45 minutes	72 minutes	63 minutes		
40%	Off-net	120 minutes	30 minutes	48 minutes	42 minutes		
Total		300 minutes	75 minutes	120 minutes	105 minutes		

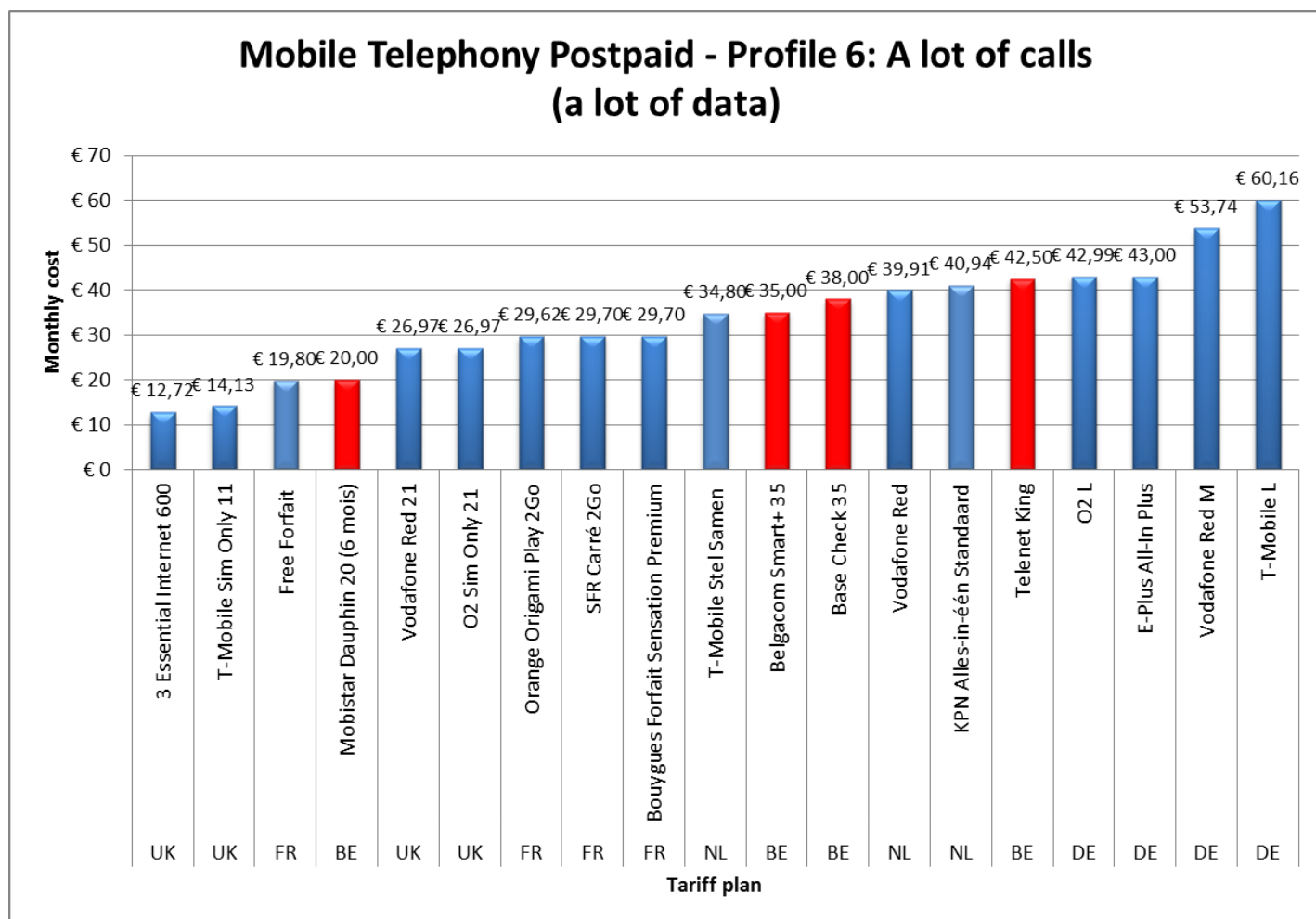


Figure 27: Comparison tariff plans for postpaid mobile telephony profile 6 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

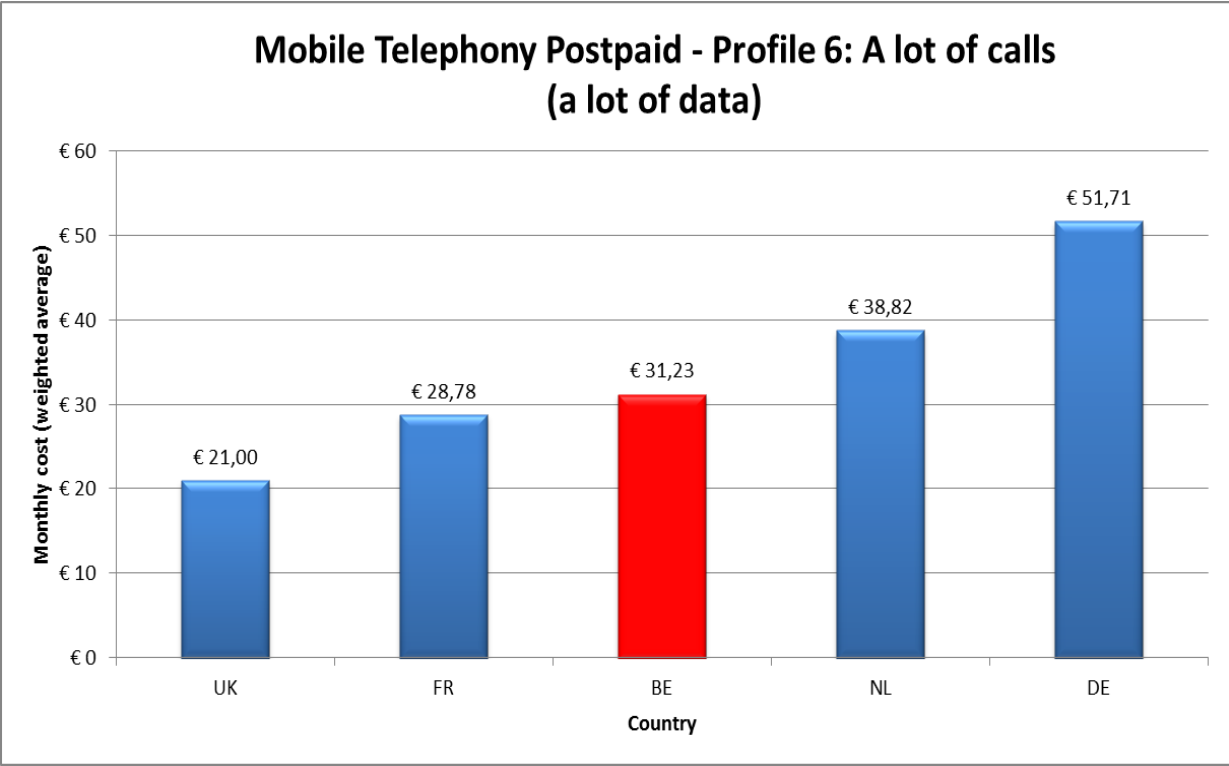


Figure 28: Weighted average per country for postpaid mobile telephony profile 6 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

4.7 Summary of the postpaid mobile telephony results

100. In general the following trend in postpaid mobile telephony is observed: a Belgian consumer would pay slightly less in France or the United Kingdom for his use of mobile telephony. However, the difference is not big. The Netherlands and Germany are quite more expensive.
101. The price level for mobile calling has dropped significantly in Belgium in the past year, but prices have also gone down in the four neighbouring countries. The position of Belgium compared to the neighbouring countries has improved: Belgium is no longer situated in the pack but it is now part of the leaders together with France and the UK. Indeed, the price difference between France, the UK and Belgium is not big.
102. BIPT points out that the number of flat fee tariff plans (unlimited calls, unlimited SMS messages) has risen in Belgium compared to last year. There is also a clear rise in the number of mobile data allowed in a tariff plan.
103. In this comparison only SIM only tariffs have been analysed. In Belgium the large majority of customers has a SIM only tariff plan, though in our neighbouring countries, abroad handset-subsidized tariff plans are more common.
104. The study has only taken account of the tariff plans marketed in the August period. Seeing that the mobile telephony market is very dynamic the price level may well have changed in the meantime. In reality we see that consumers often have a tariff plan that is not suited for their needs, or not adapted to recent price evolutions (see topic 7).

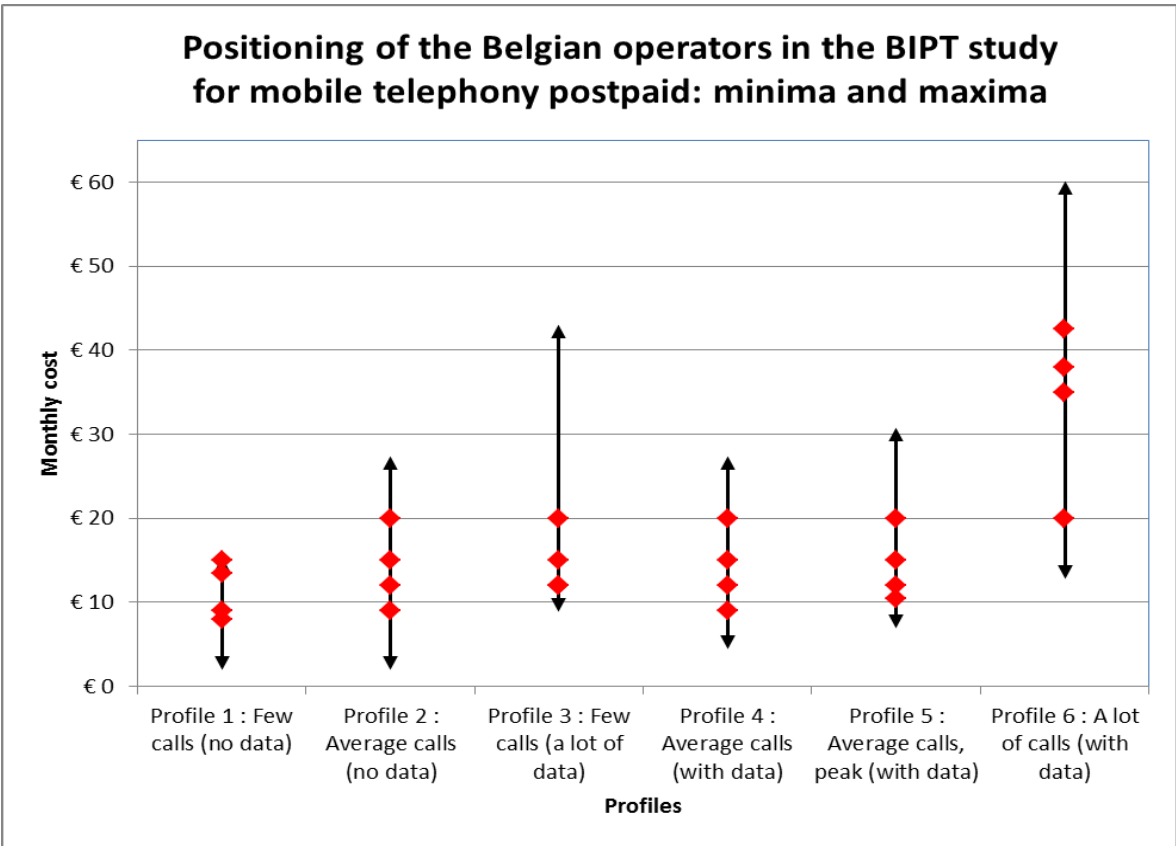


Figure 29: Overview of the minimum and maximum price observed in the five countries, per profile, postpaid mobile telephony (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

5 MOBILE TELEPHONY (PREPAID)

5.1 Profile 1: Few calls (no data)

Profile 1: Few calls (no data): 50 call minutes, 100 SMS messages							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	100	-
65%	On-net	32.5 minutes	13 minutes	9.75 minutes	9.75 minutes		
35%	Off-net	17.5 minutes	7 minutes	5.25 minutes	5.25 minutes		
Total		50 minutes	20 minutes	15 minutes	15 minutes		

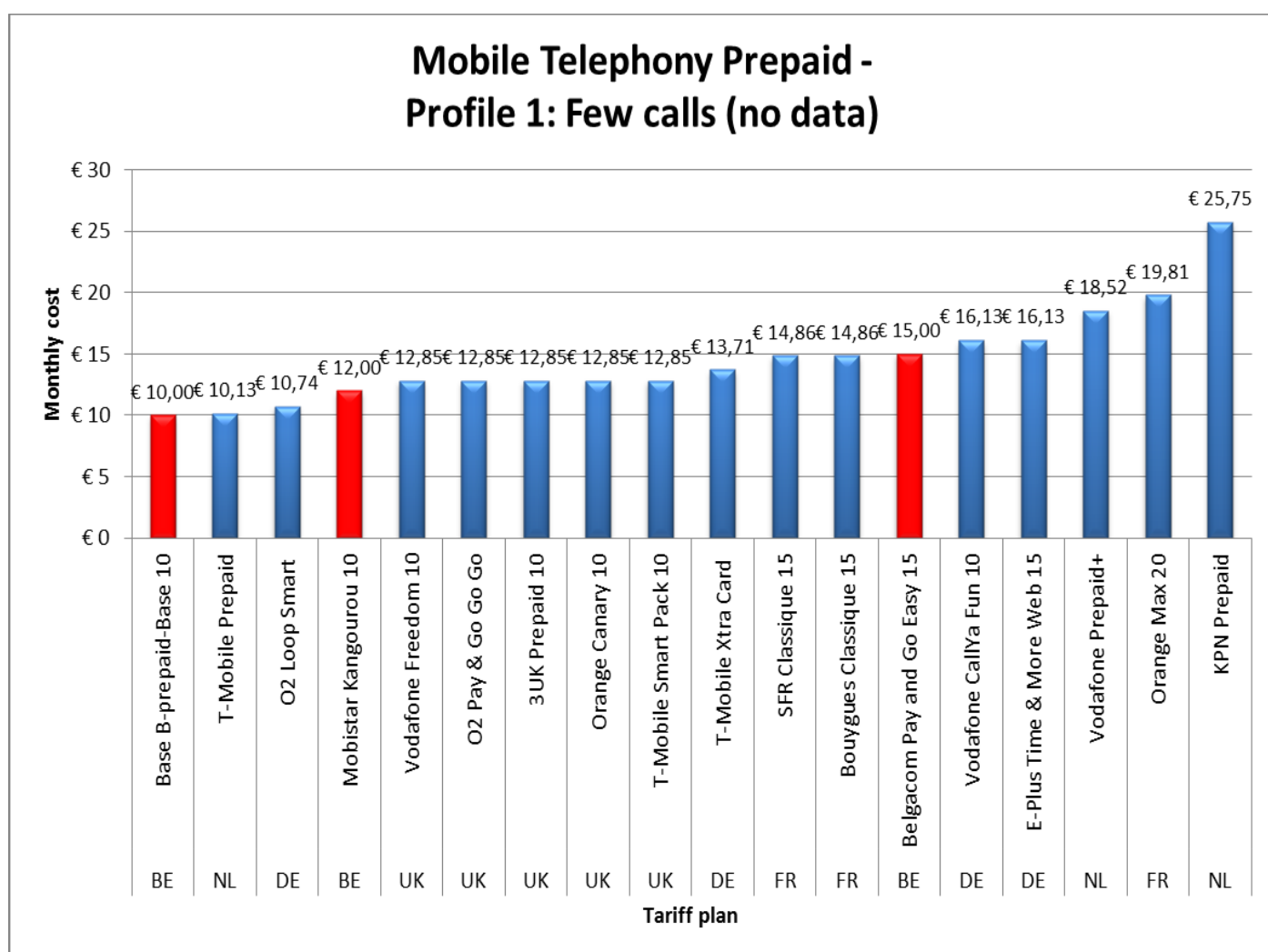


Figure 30: Comparison tariff plans for prepaid mobile telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

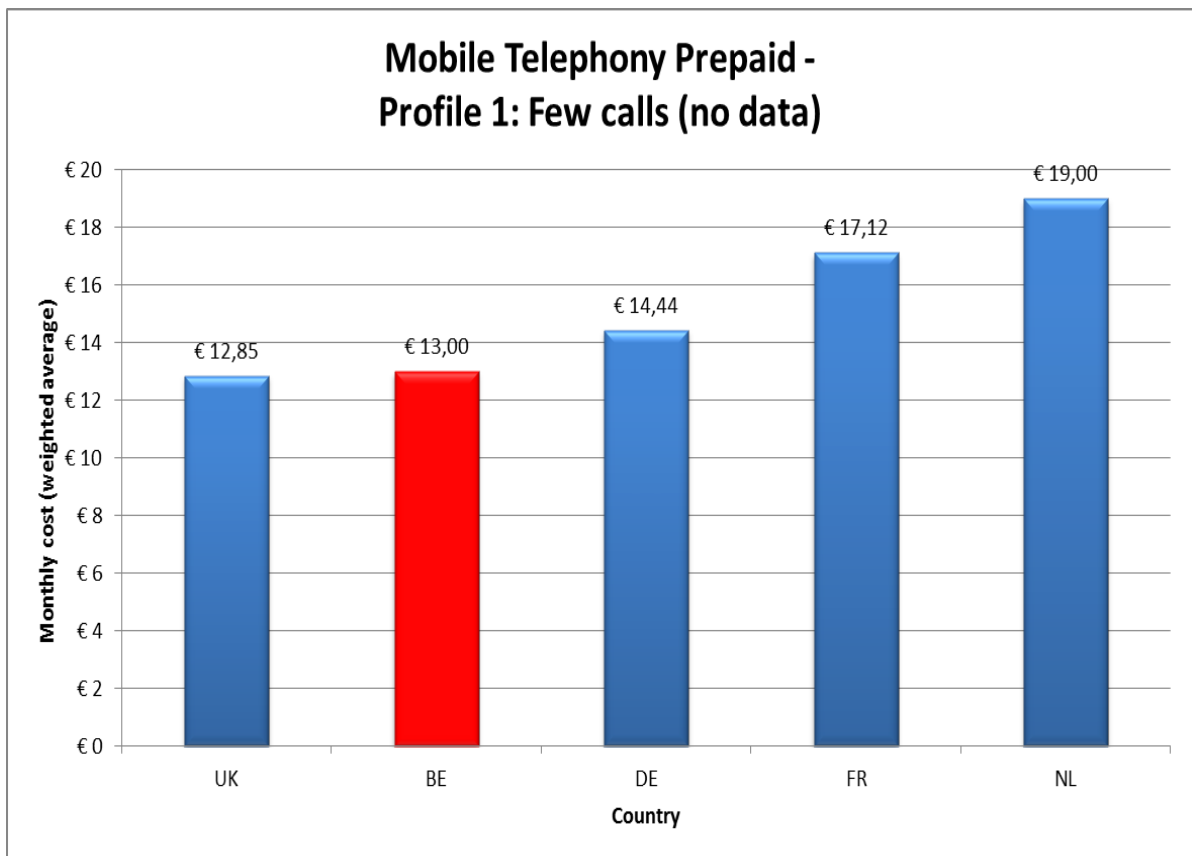


Figure 31: Weighted average per country for prepaid mobile telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

5.2 Profile 2: Many calls (no data)

Profile 2: Many calls (no data): 100 call minutes, 150 SMS messages							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	150	-
65%	On-net	65 minutes	26 minutes	19.5 minutes	19.5 minutes		
35%	Off-net	35 minutes	14 minutes	10.5 minutes	10.5 minutes		
Total		100 minutes	40 minutes	30 minutes	30 minutes		

Mobile Telephony Prepaid - Profile 2: A lot of calls (no data)

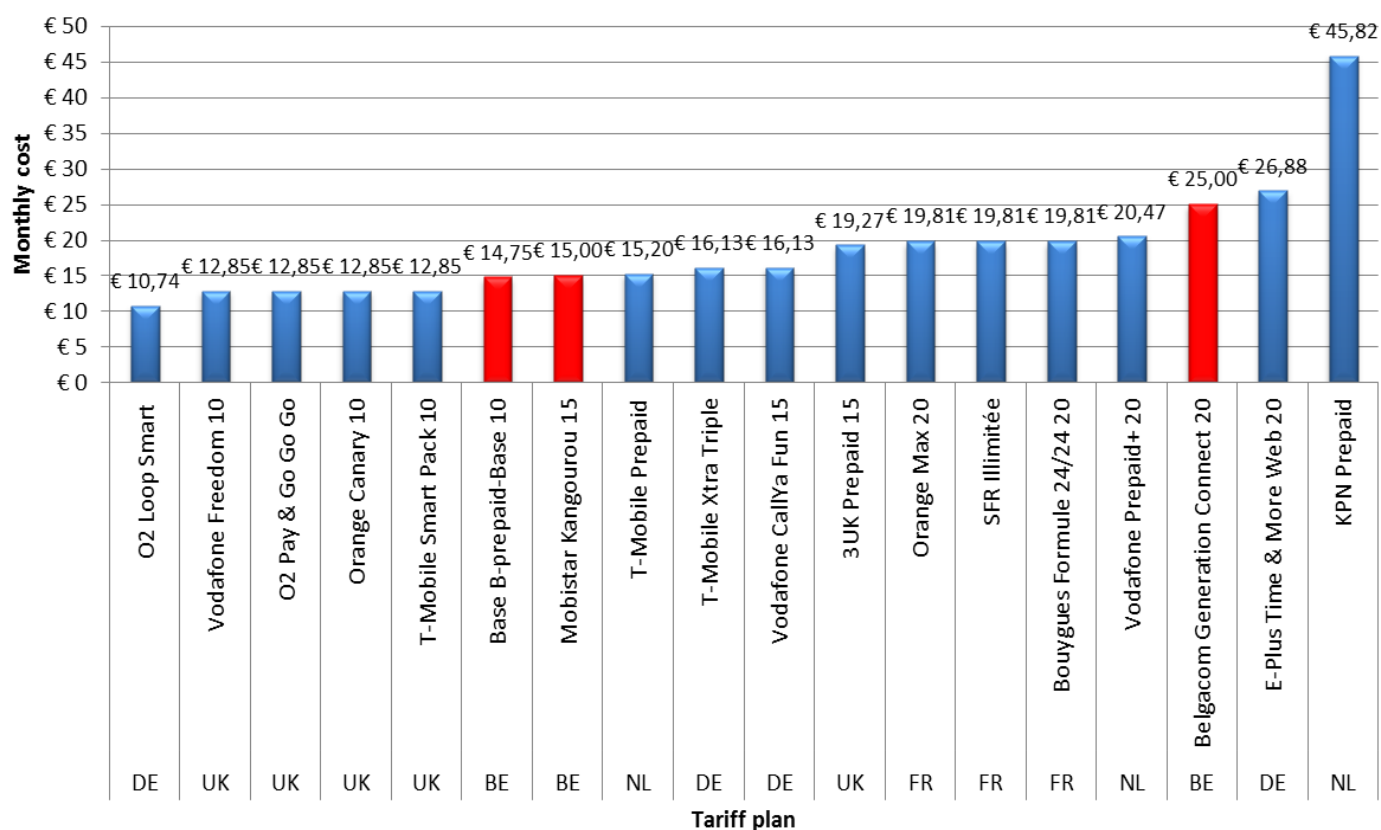


Figure 32: Comparison tariff plans for prepaid mobile telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

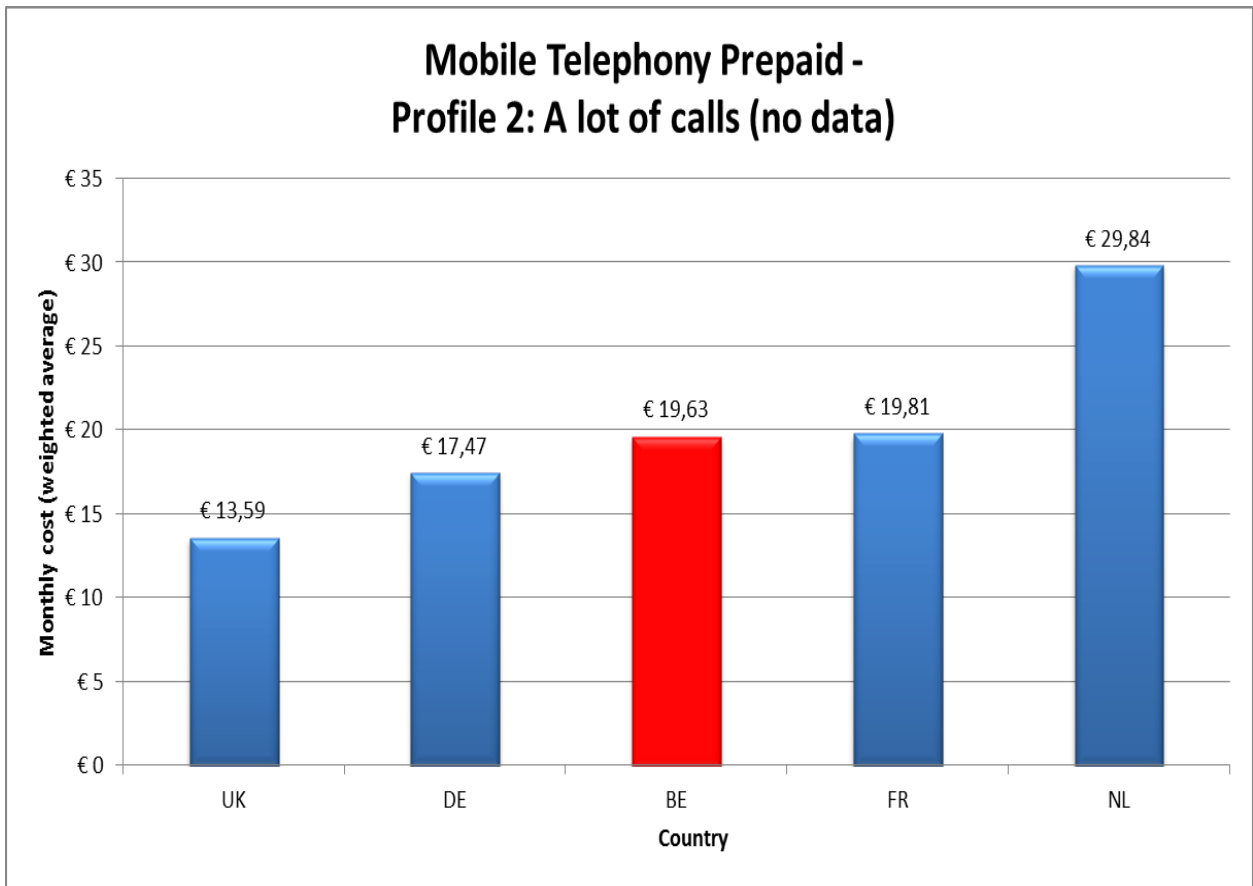


Figure 33: Weighted average per country for prepaid mobile telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

5.3 Profile 3: Average calls (with data)

Profile 3: Few calls (with data): 50 call minutes, 50 SMS messages, 50 MB							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	50	50 MB
65%	On-net	32.5 minutes	13 minutes	9.75 minutes	9.75 minutes		
35%	Off-net	17.5 minutes	7 minutes	5.25 minutes	5.25 minutes		
Total		50 minutes	20 minutes	15 minutes	15 minutes		

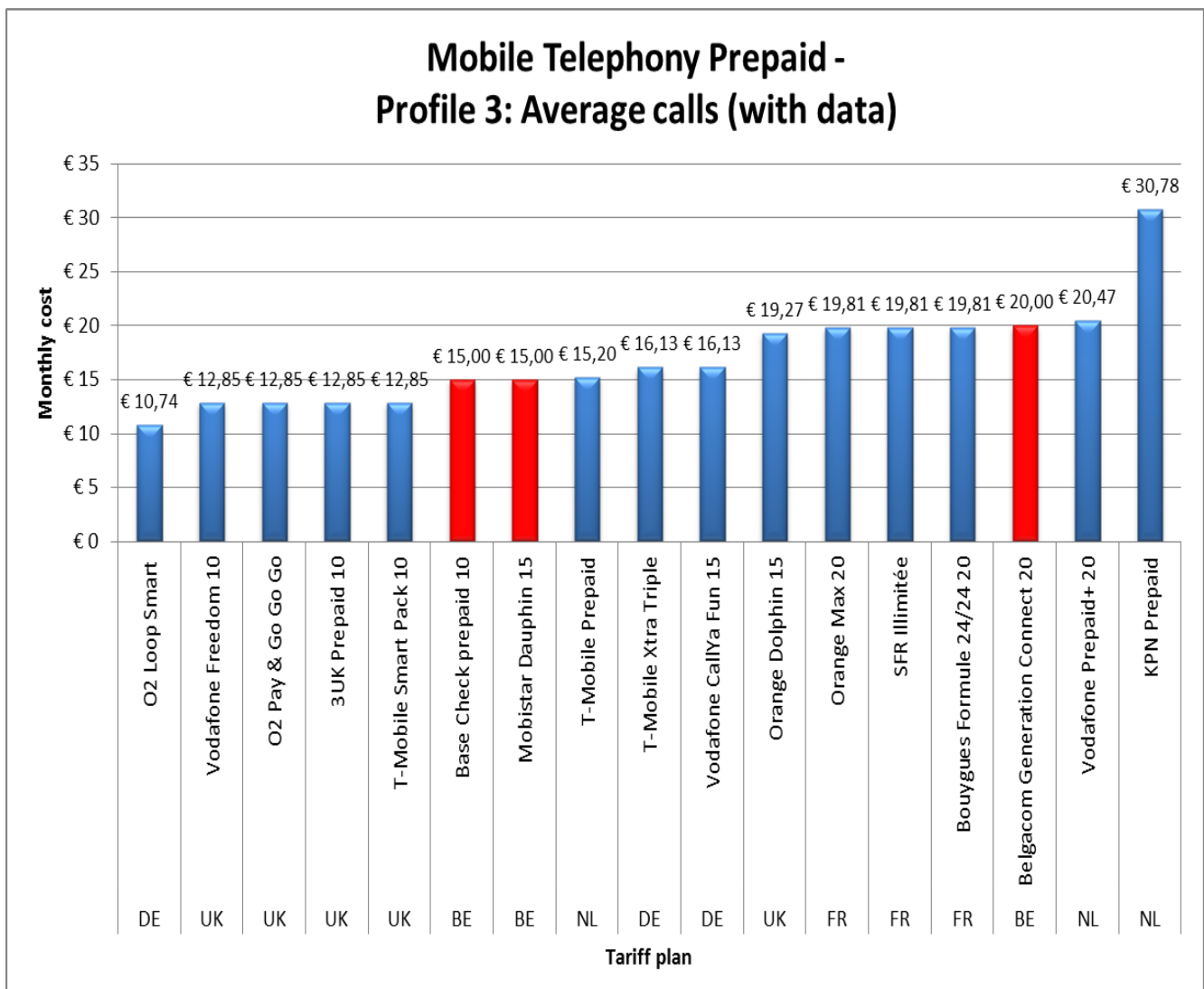


Figure 34: Comparison tariff plans for prepaid mobile telephony profile 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

5.4 Profile 4: Few calls (a lot of data)

Profile 4: Few calls (a lot of data): 20 call minutes, unlimited SMS messages, 1 GB of data							
		Number of minutes	Peak	Off-peak	Weekend	SMS	Data
Destination			40%	30%	30%	Unlimited	1 GB
65%	On-net	13 minutes	5.2 minutes	3.9 minutes	3.9 minutes		
35%	Off-net	7 minutes	2.8 minutes	2.1 minutes	2.1 minutes		
Total		20 minutes	8 minutes	6 minutes	6 minutes		

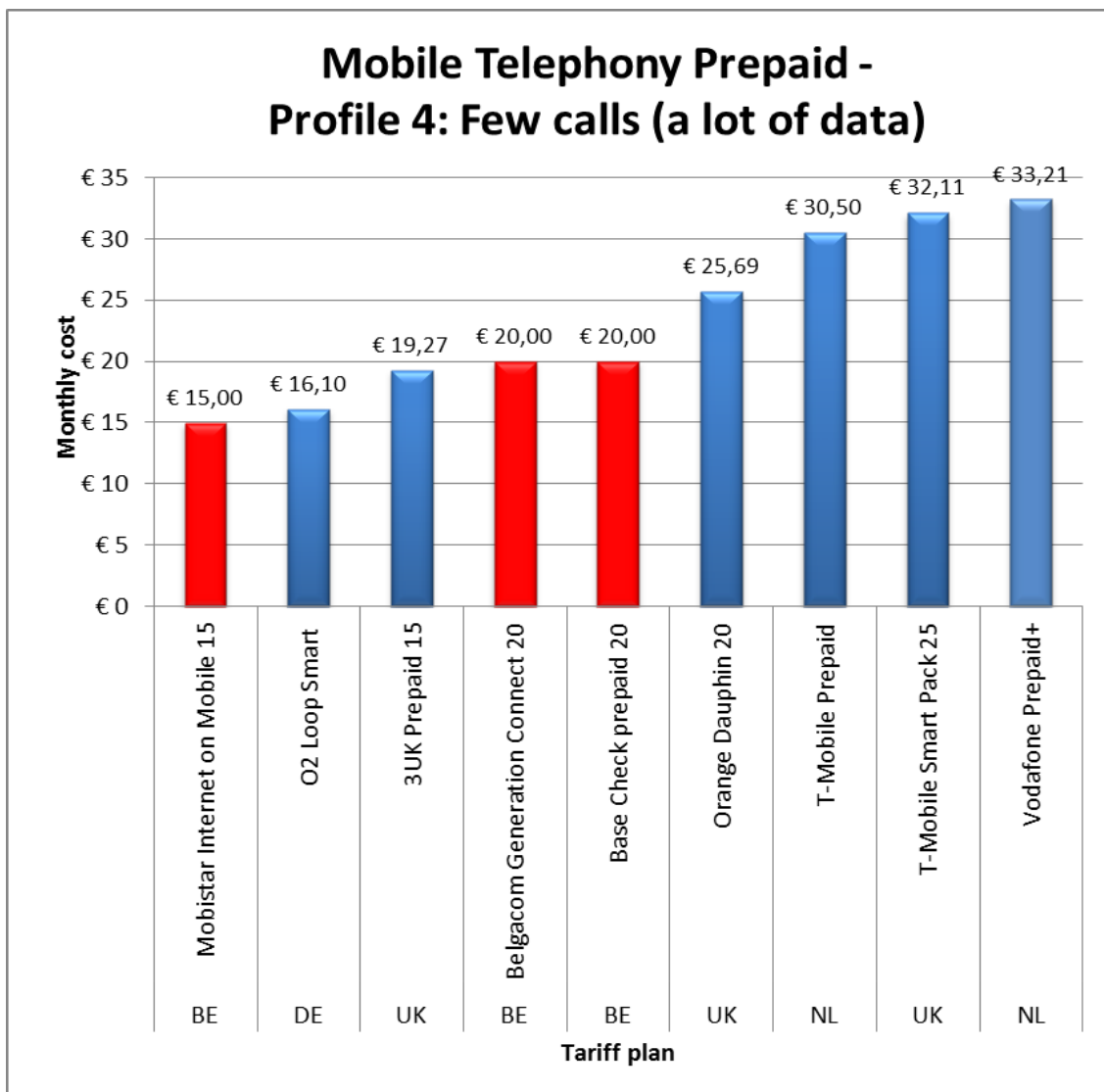


Figure 35: Comparison tariff plans for prepaid mobile telephony profile 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

5.5 Summary of the prepaid mobile telephony results

105. In general the following trend in prepaid mobile telephony is observed: Belgium and Germany alternately take second place. In general the United Kingdom is cheaper. Belgian consumers would pay more in France and the Netherlands.
106. Compared to 2012 Belgium keeps its good position. The classification corresponds with last year's results. BIPT finds that in Belgium more tariff plans with data are available than last year.

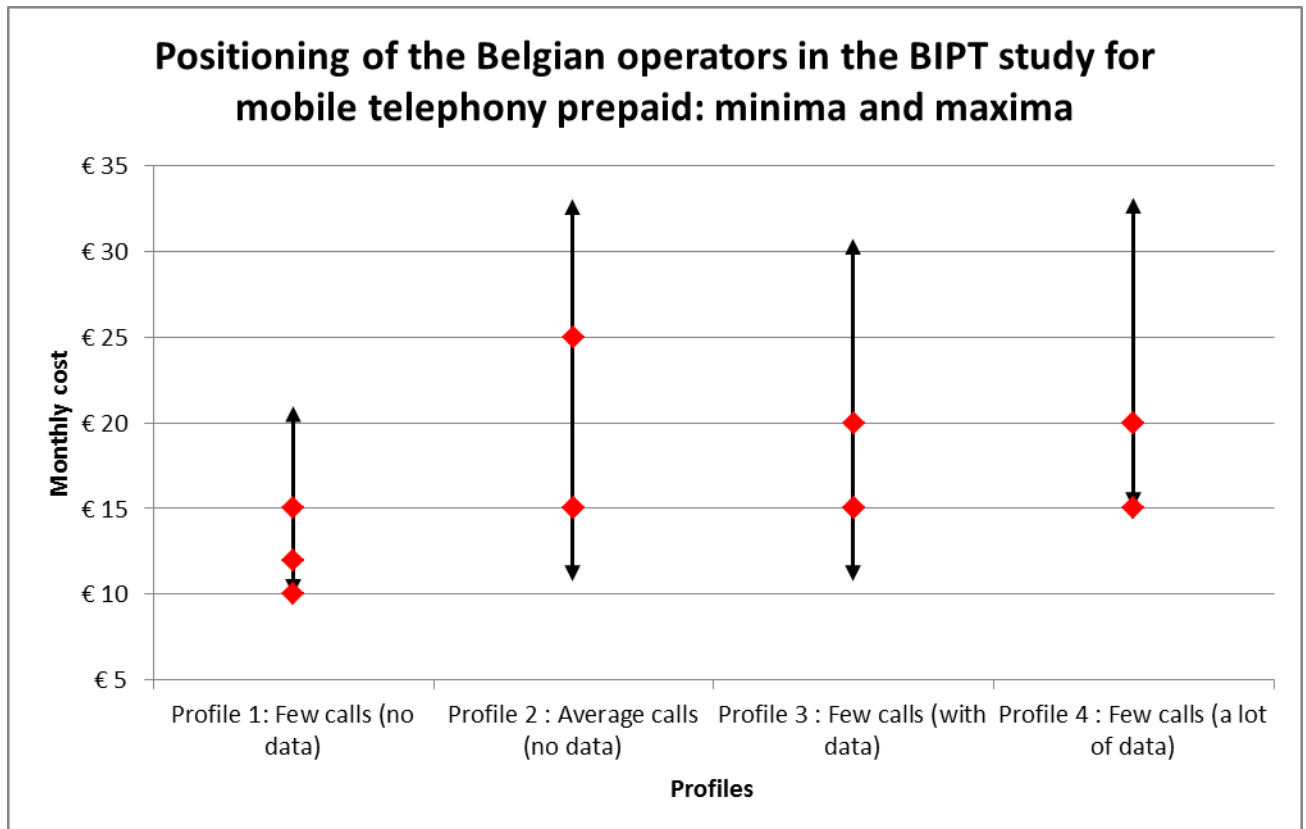


Figure 36: Overview of the minimum and maximum price observed in the five countries, per profile, prepaid mobile telephony (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6 FIXED TELEPHONY

6.1 Profile 1: Low use

Profile 1: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%

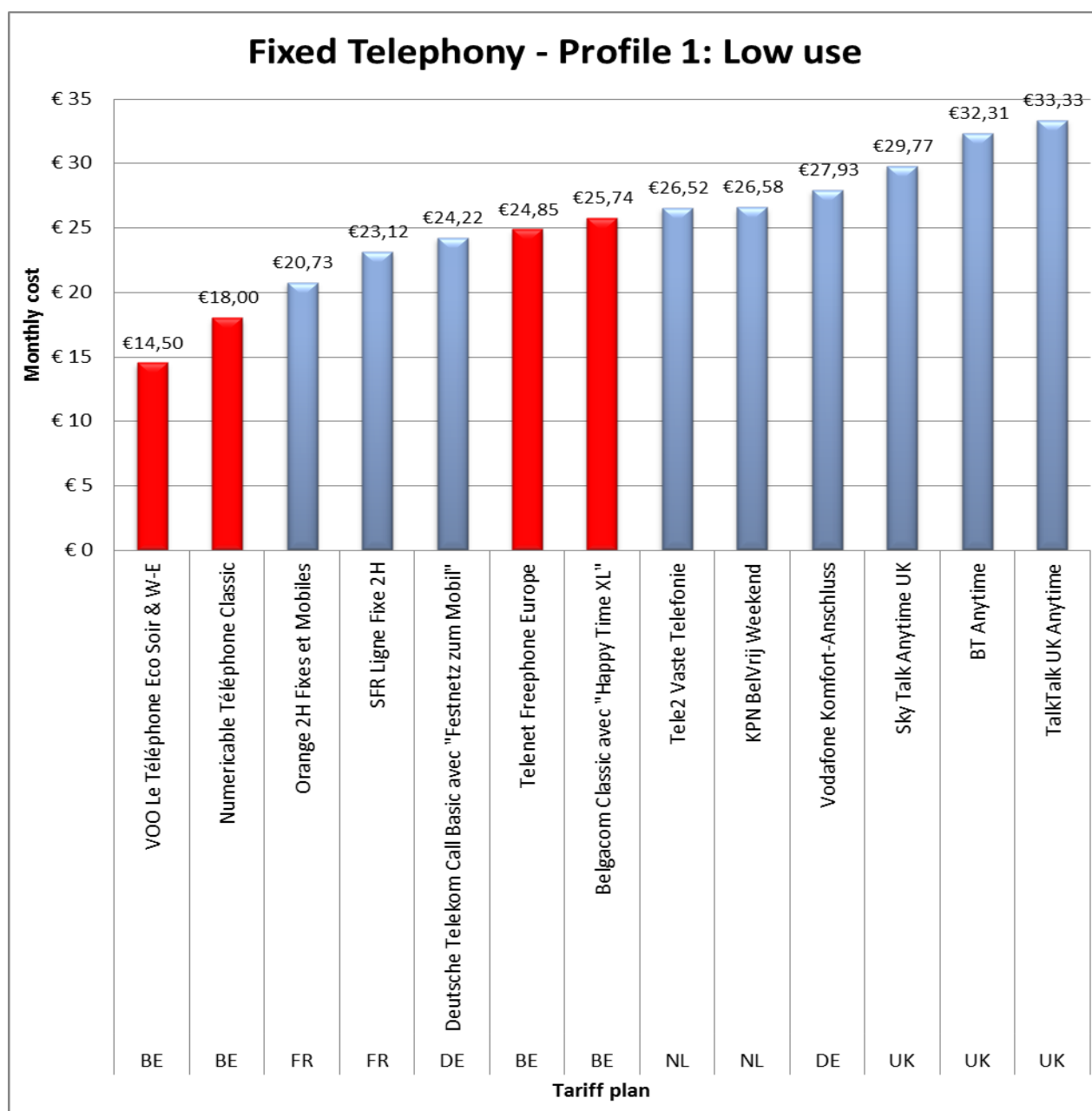


Figure 37: Comparison tariff plans for fixed telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

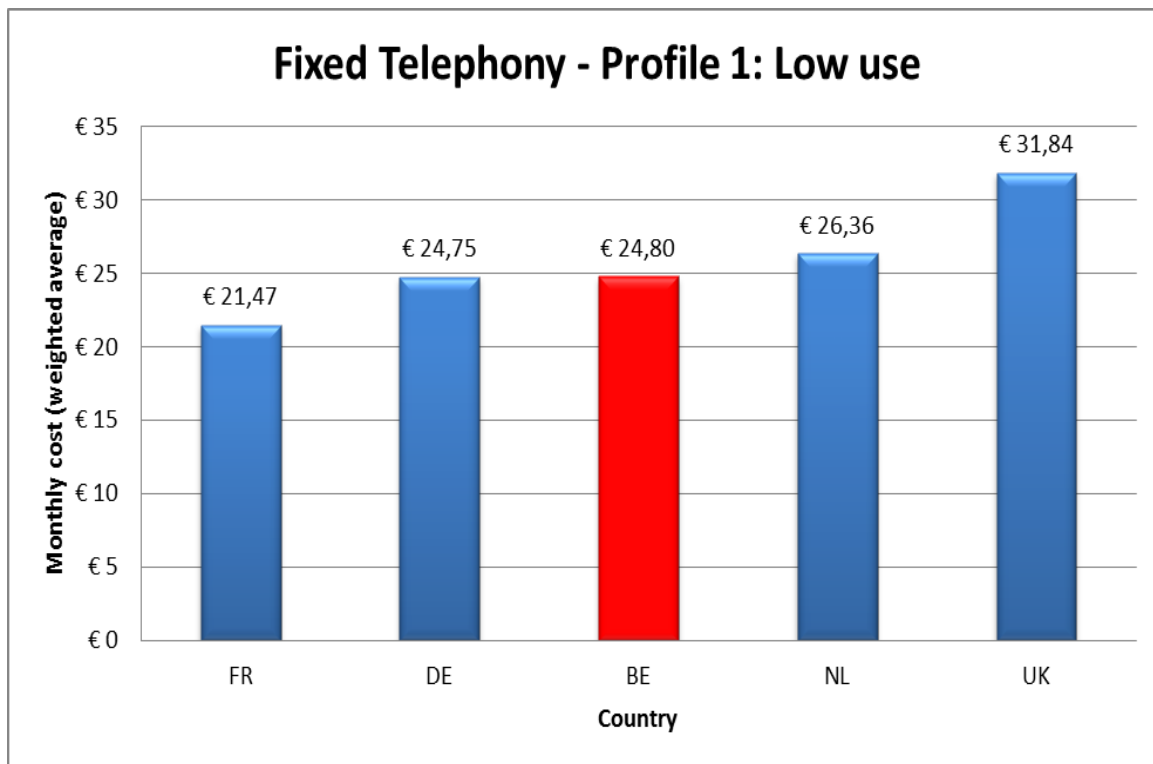


Figure 38: Weighted average per country for fixed telephony profile 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6.2 Profile 2: Medium use (off-peak and weekend)

Profile 2: Medium use, off-peak and during the weekend (70 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	53	30%	30%	40%
25%	Mobile	17	35%	25%	40%

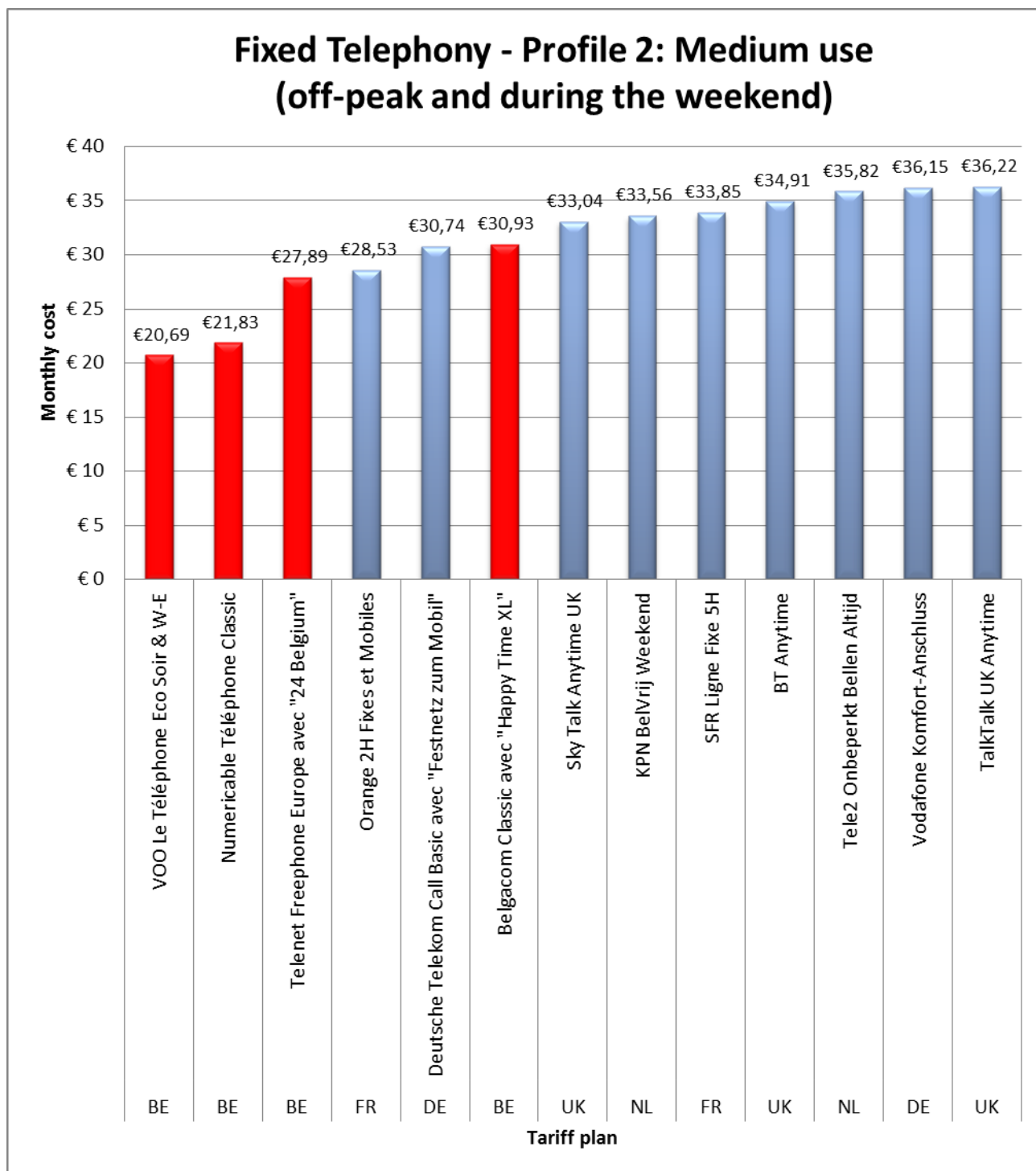


Figure 39: Comparison tariff plans for fixed telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

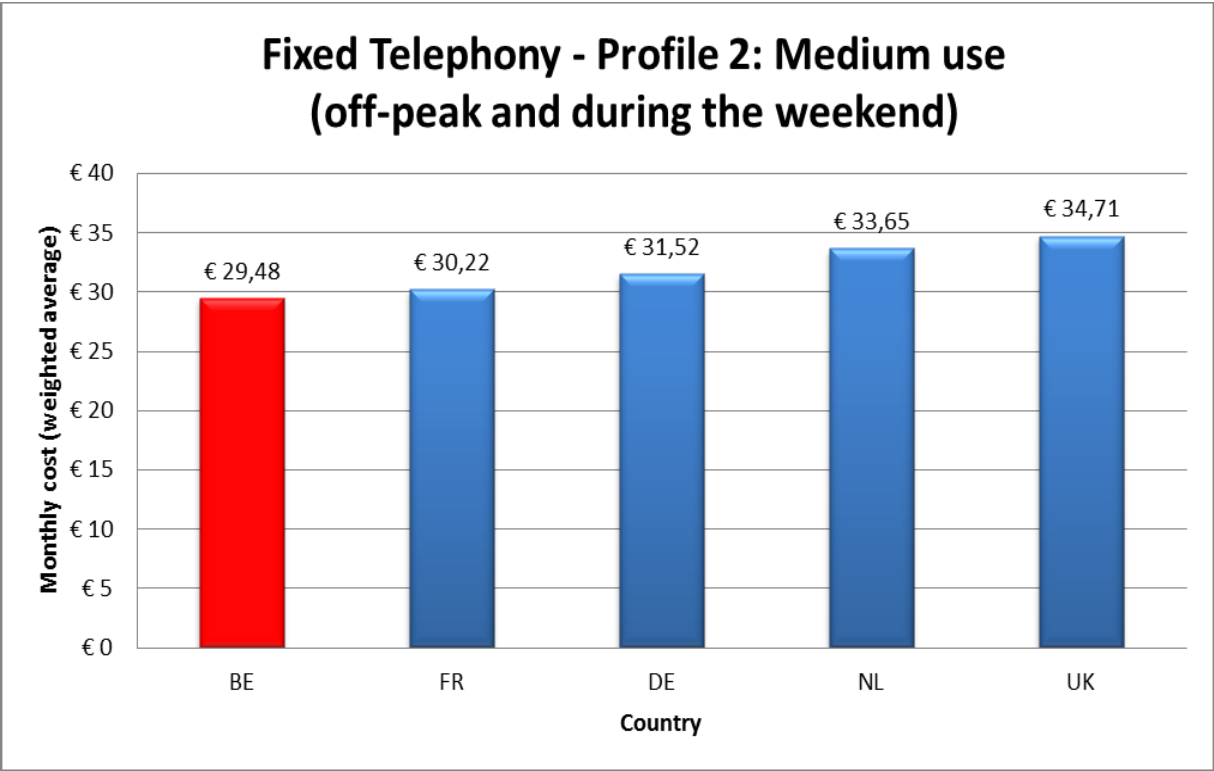


Figure 40: Weighted average per country for fixed telephony profile 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6.3 Profile 3: Medium use (peak hours)

Profile 3: Medium use, week during the day (70 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	53	60%	20%	20%
25%	Mobile	17	60%	20%	20%

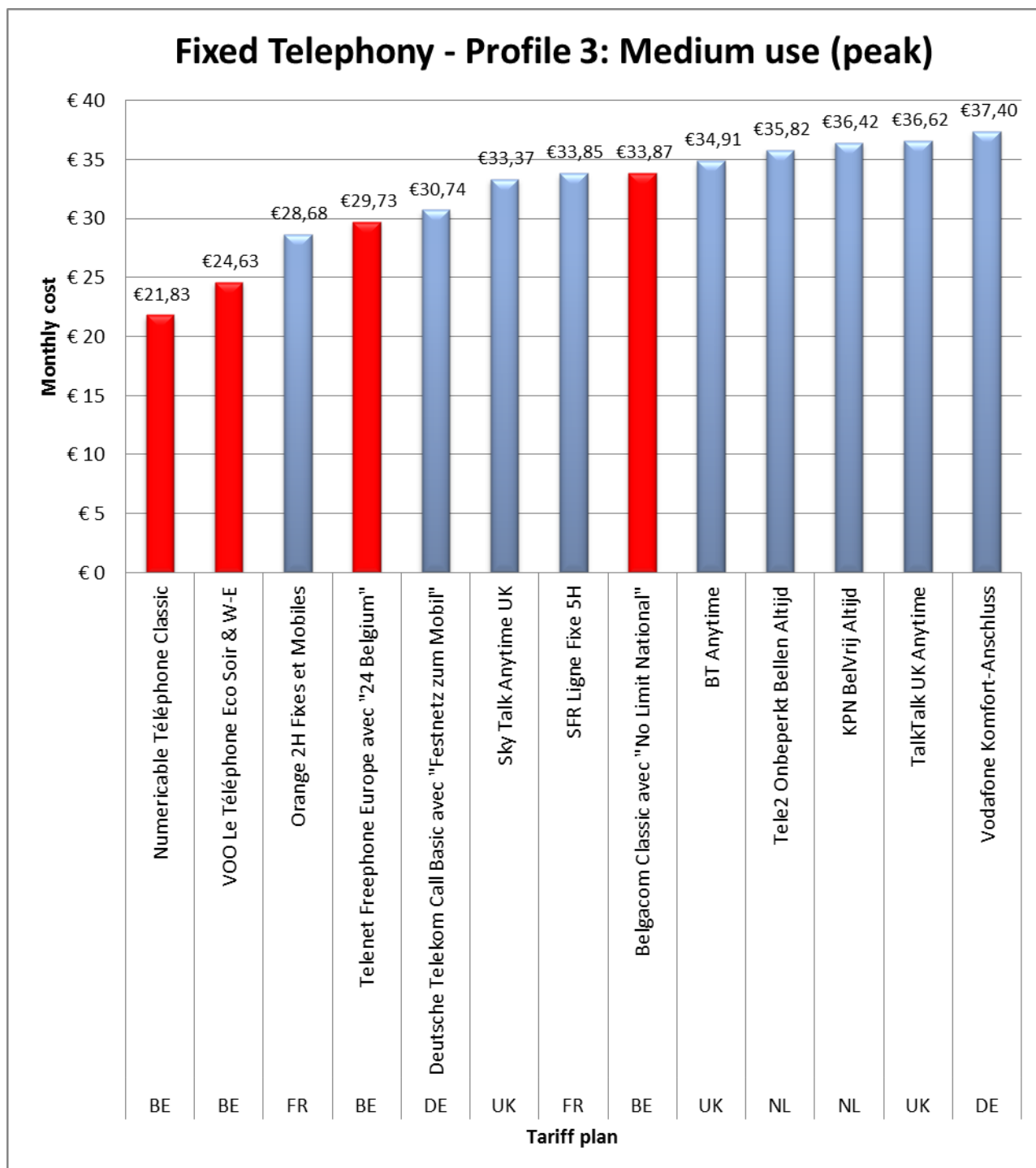


Figure 41: Comparison tariff plans for fixed telephony profile 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

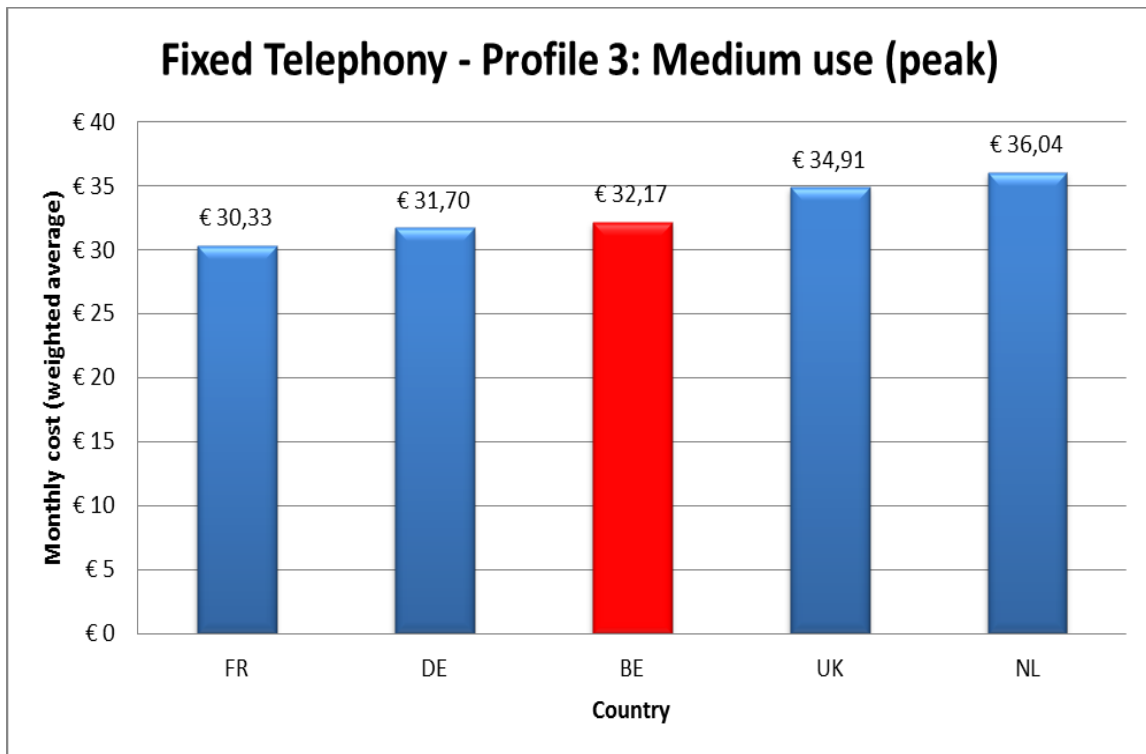


Figure 42: Weighted average per country for fixed telephony profile 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6.4 Profile 4: Intensive use (off-peak and weekend)

Profile 4: Heavy use, off-peak and during the weekend (120 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	90	30%	30%	40%
25%	Mobile	30	35%	25%	40%

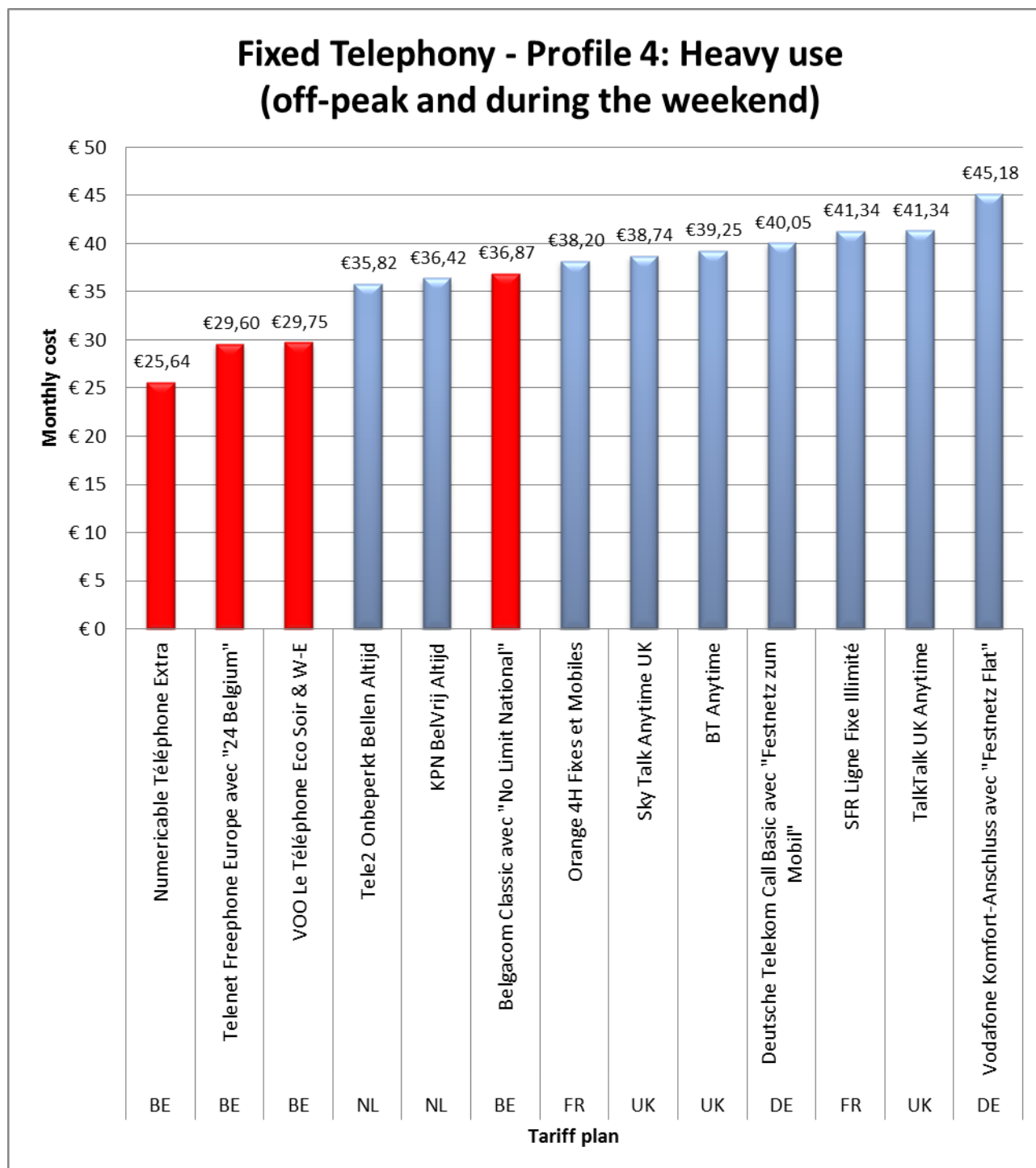


Figure 43: Comparison tariff plans for fixed telephony profile 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

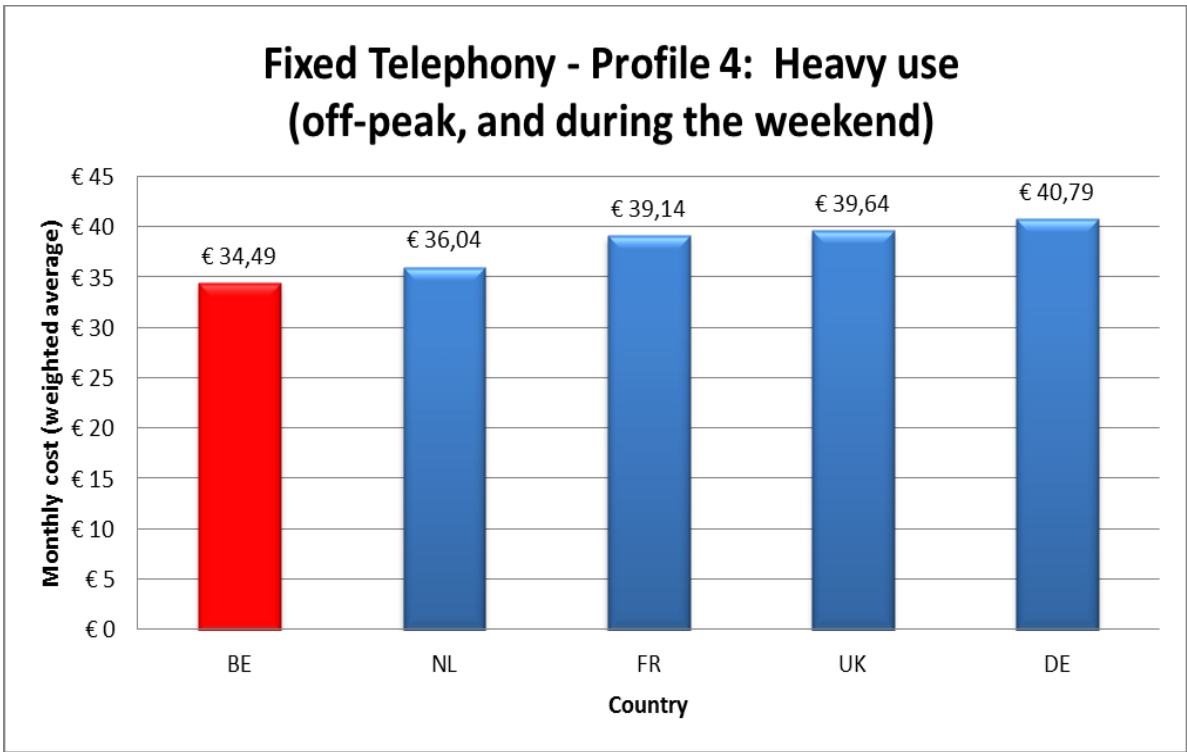


Figure 44: Weighted average per country for fixed telephony profile 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6.5 Profile 5: Intensive use (peak)

Profile 5: Heavy use, mainly during the day during the week (120 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
75%	Fixed	90	60%	20%	20%
25%	Mobile	30	60%	20%	20%

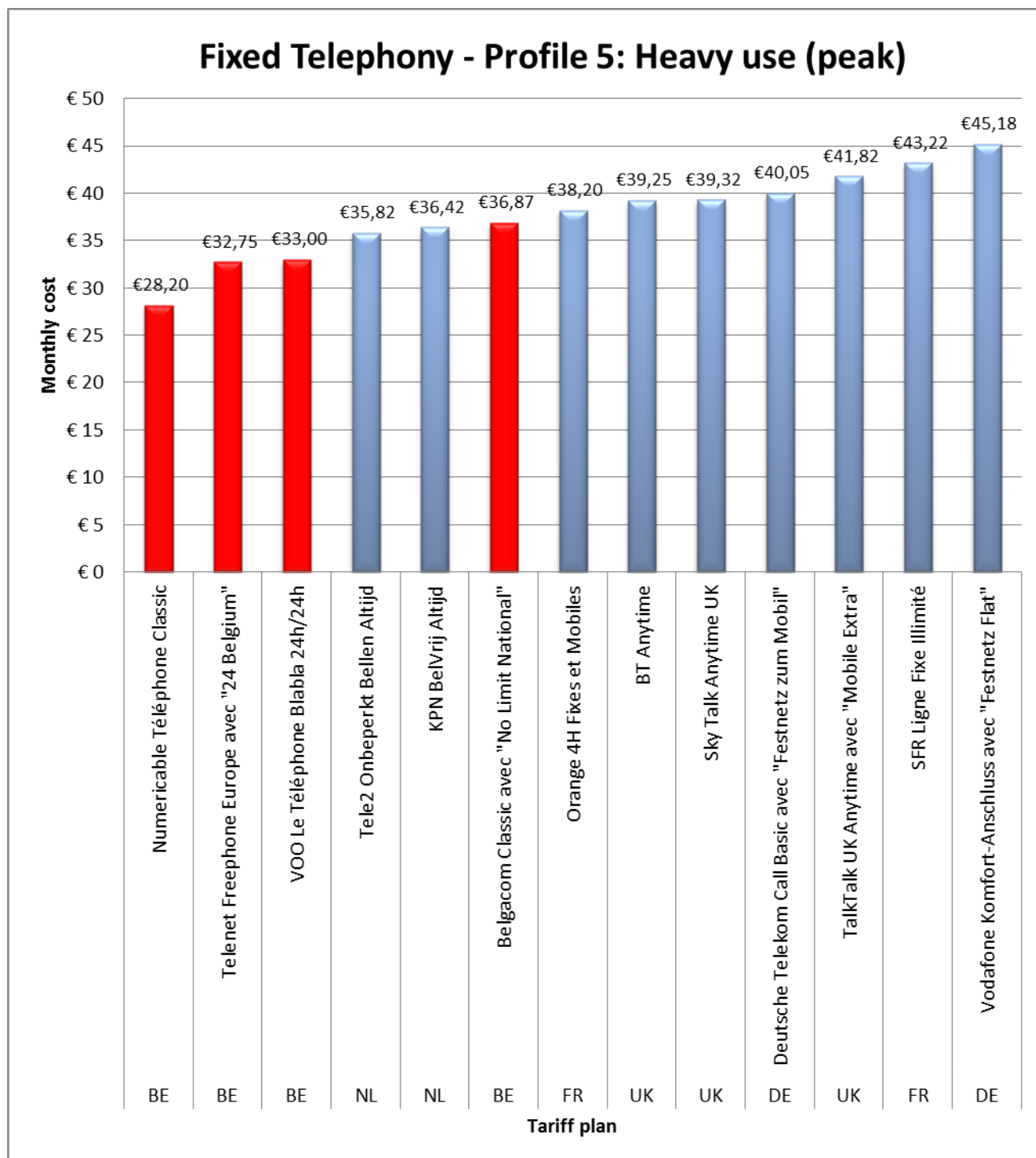


Figure 45: Comparison tariff plans for fixed telephony profile 5 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

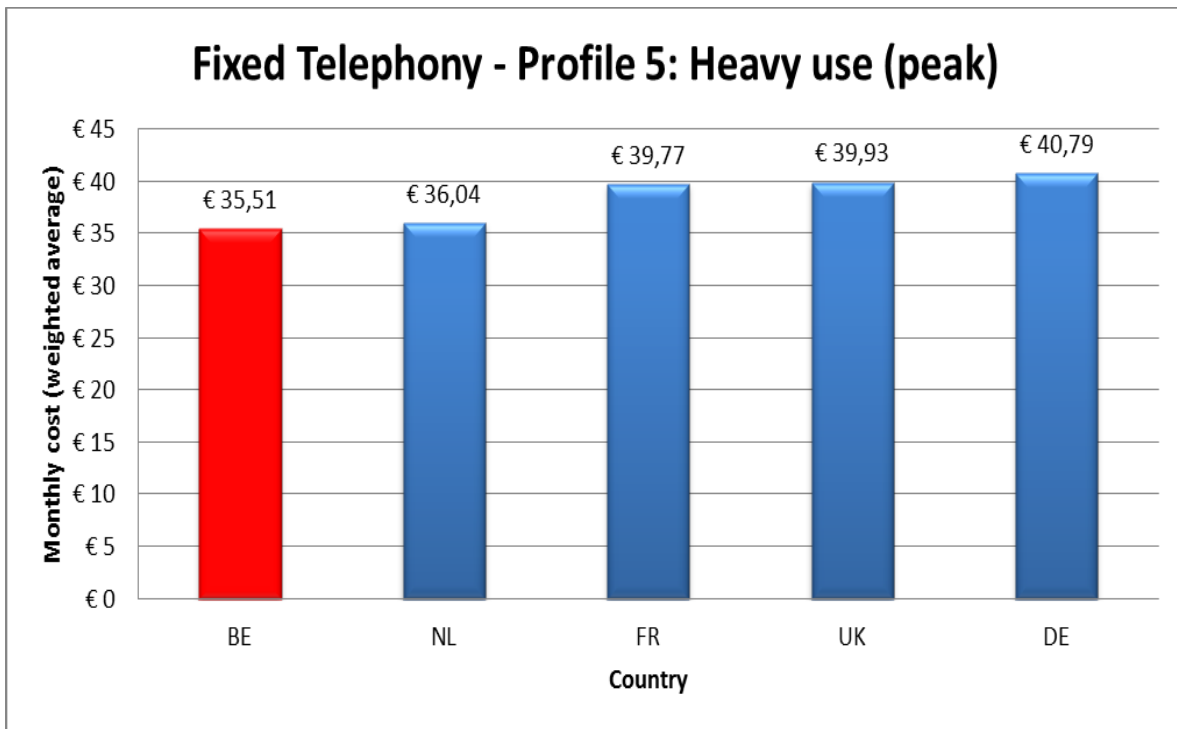


Figure 46: Weighted average per country for fixed telephony profile 5 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

6.6 Summary of the fixed telephony results

107. As far as fixed telephony is concerned the cheapest Belgian tariff plans for all profiles take the lowest and the lowest but one positions in the price classification. It should be pointed out that not all Belgian tariff plans are available throughout the territory. Within the selection of Belgian operators only Belgacom has national coverage.
108. When considering the whole range of Belgian tariff plans it can be said that Belgium is positioned favourably within the group of the analysed countries. Belgium has the lowest weighted average price for three out of five profiles (profiles 2, 4 and 5). In profiles 1 and 3 France is cheapest. In all user profiles Belgian consumers would pay more in the Netherlands and the UK. Germany is sometimes cheaper, sometimes more expensive.
109. Despite the (minor) price increases introduced by the two market leaders, the position of Belgium compared to the neighbouring countries has improved or stayed the same - with the exception of profile 1.

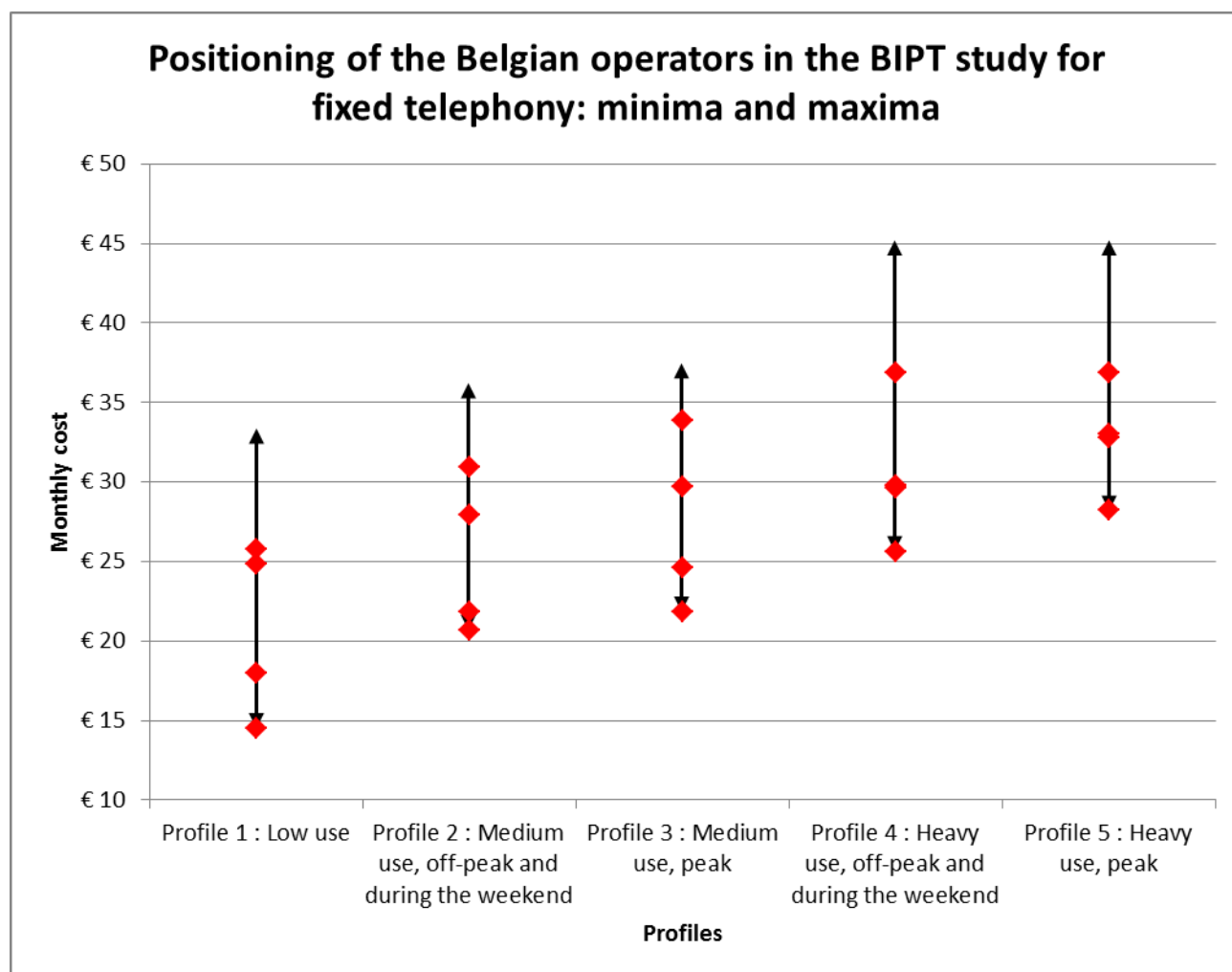


Figure 47: Overview of the minimum and maximum price observed in the five countries, per profile, fixed telephony (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

7 BROADBAND INTERNET

7.1 Category 1: Low speed

Category 1: Low speed	Speed < 30 Mbps Volume undetermined

110. In this category no tariff plans have been observed for the selected Belgian operators.

7.2 Category 2: Medium speed, medium volume

Category 2: Average speed	30 Mbps ≥ Speed < 100 Mbps Volume ≥ 100 GB
Offers focusing on end-users with average Internet usage	

7.3 Category 3: Medium speed, unlimited volume

Category 3: Average speed	30 Mbps ≥ Speed < 100 Mbps Volume unlimited
Offers focusing on end-users with average Internet usage	

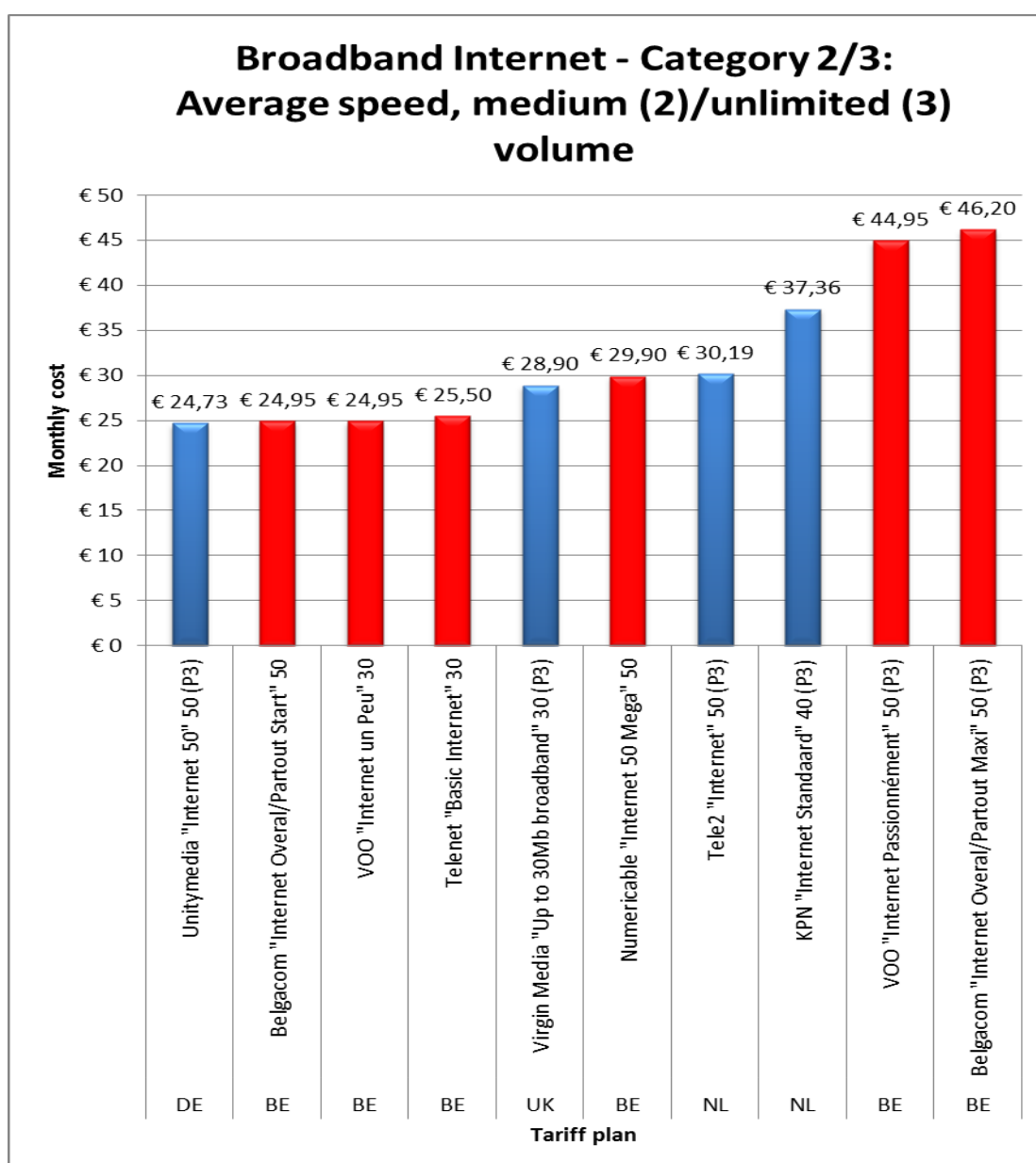


Figure 48: Comparison tariff plans for broadband Internet categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

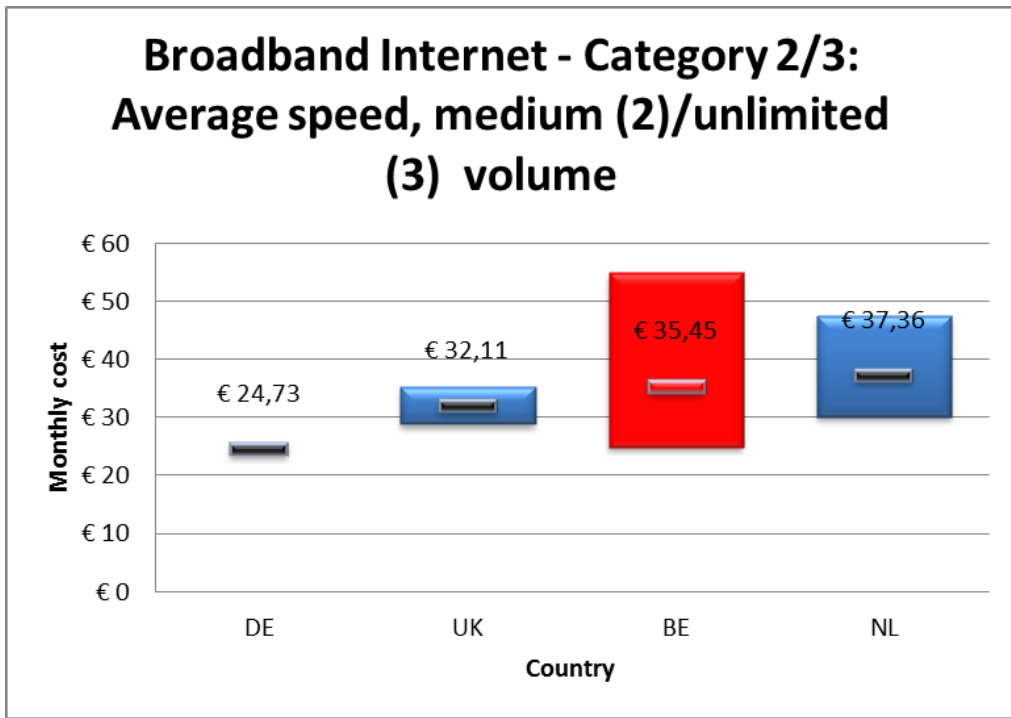


Figure 49: Median price, minimum and maximum price per country for broadband Internet categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

7.4 Category 4: High speed

Category 4: High speed	Speed ≥ 100 Mbps Volume unlimited
Offers with highest speed on the market for intensive users	

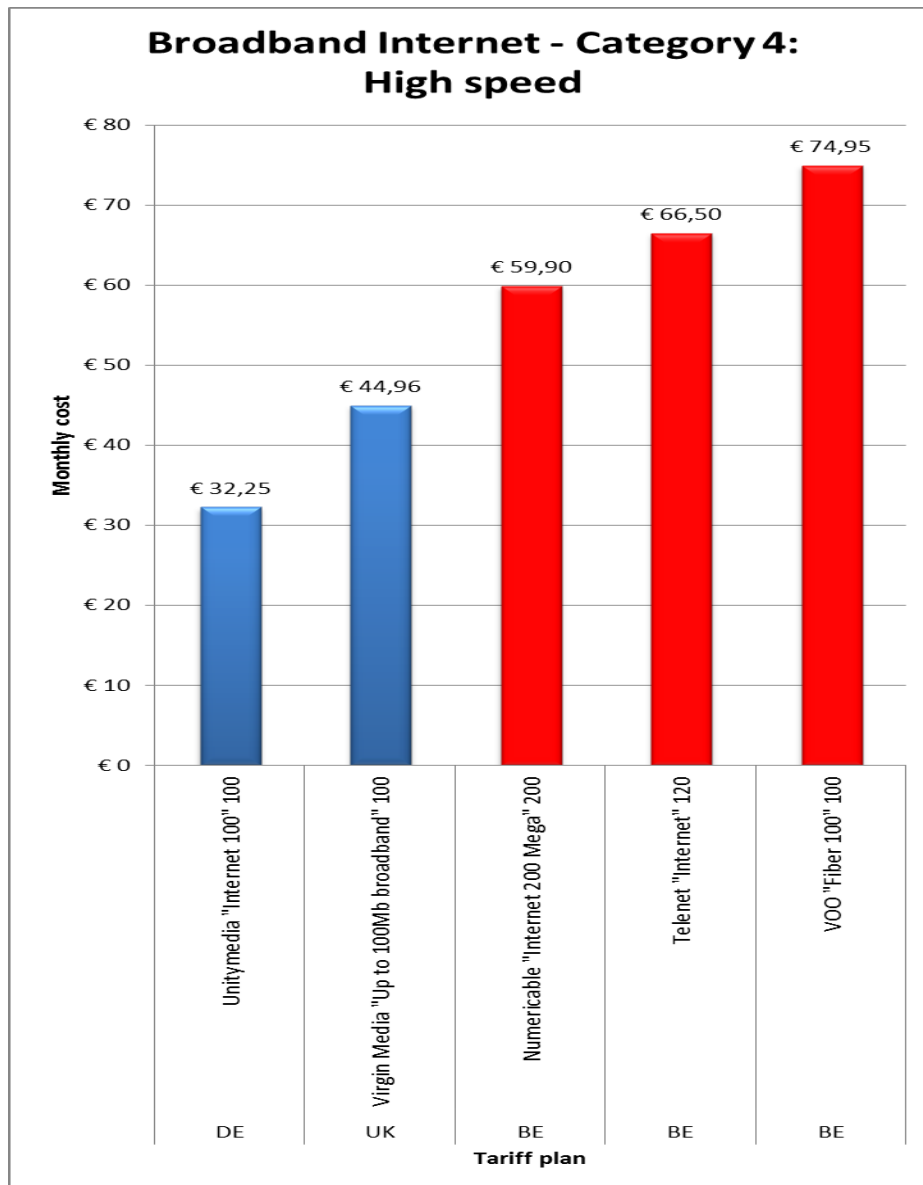


Figure 50: Comparison tariff plans for broadband Internet category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

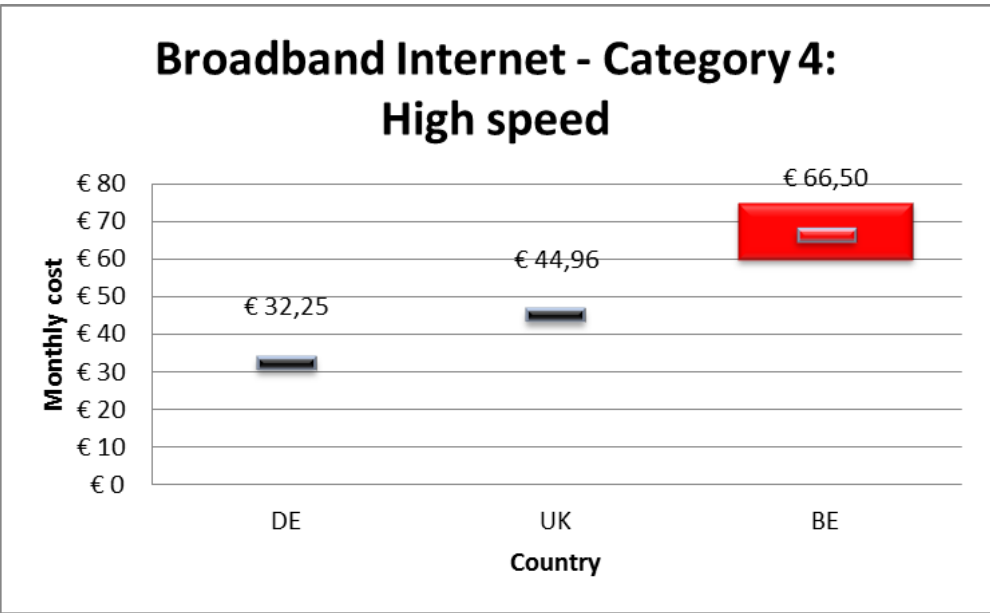


Figure 51: Median price, minimum and maximum price per country for broadband Internet category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

7.5 Summary of the broadband Internet results

111. The Belgian operators analysed only offer broadband at a bit rate of 30 Mbps minimum. In categories 2 and 3 the Belgian tariff plans are situated at either end of the price scale: prices are differentiated based on the download limit set within a tariff plan. Based on the median observation Belgium takes a less favourable third place within the group of four countries where this broadband category is offered. However, the cheapest Belgian tariff plans in categories 2/3 are inexpensive and range among the lowest in the population examined. It is pointed out that only Belgacom products are available throughout the territory.
112. Ultrafast broadband (download speed of at least 100 Mbps) is expensive in Belgium, although it should be pointed out that representativeness is currently relatively low, considering the small number of tariff plans in that category. In the future the number of tariff plans for ultrafast broadband is likely to increase significantly, which may have an impact on the price level.
113. A comparison with the 2012 edition is not evident, considering the change in categorising the broadband offers and the composition of the population analysed in 2013. In 2012 a number of multiple play offers were also included, whereas the group now only consists of stand-alone broadband offers. In general we notice an increase of the download speed.
114. The results mentioned above should be differentiated based on the findings concerning regional availability of broadband and the differences between the speed advertised and the actual speed (topics 1 and 2). Topic 3 is also relevant in this context.

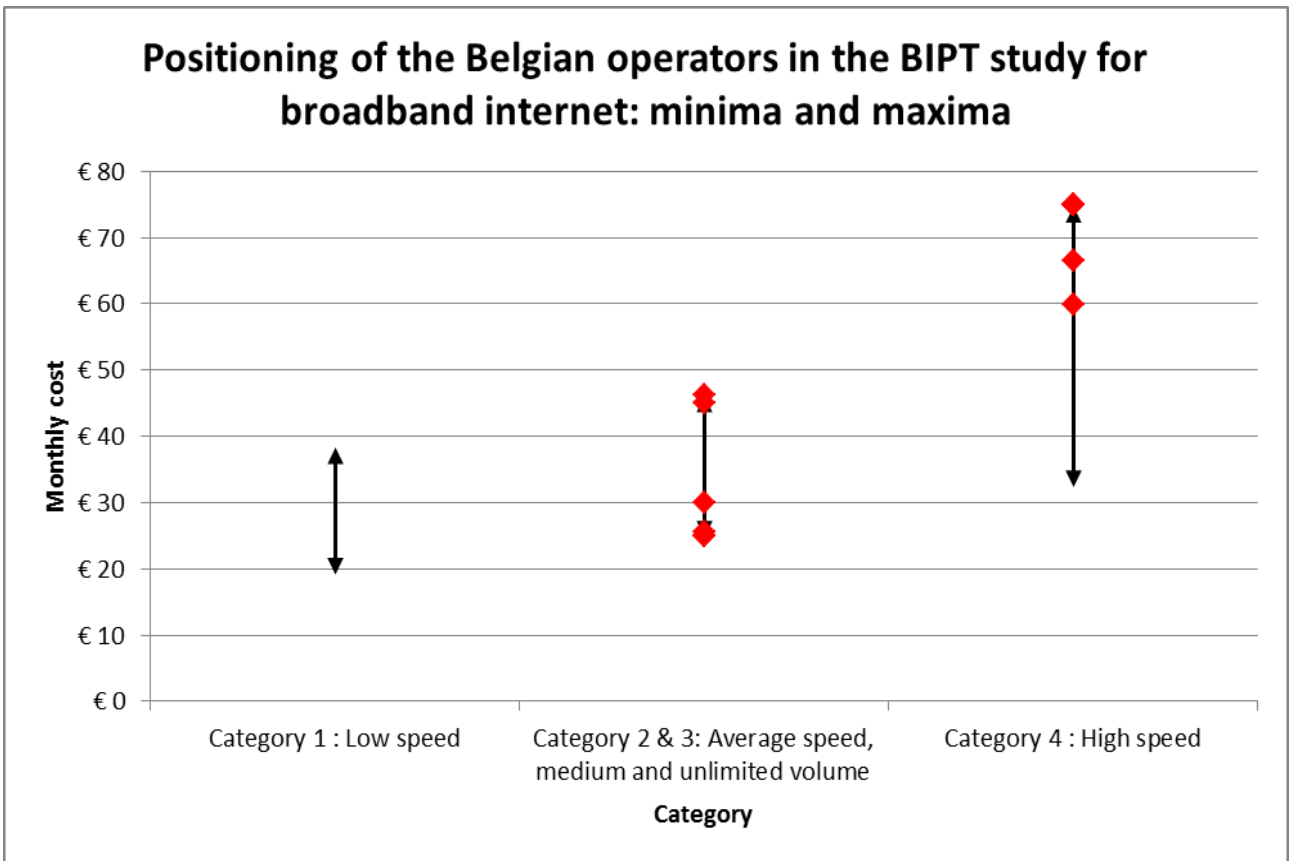


Figure 52: Overview of the minimum and maximum price observed in the five countries, per category, broadband Internet (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

8 MOBILE INTERNET (FOR TABLET USERS)

8.1 Category 1: Low use

Category 1: Low use	200 < volume ≤ 500 MB
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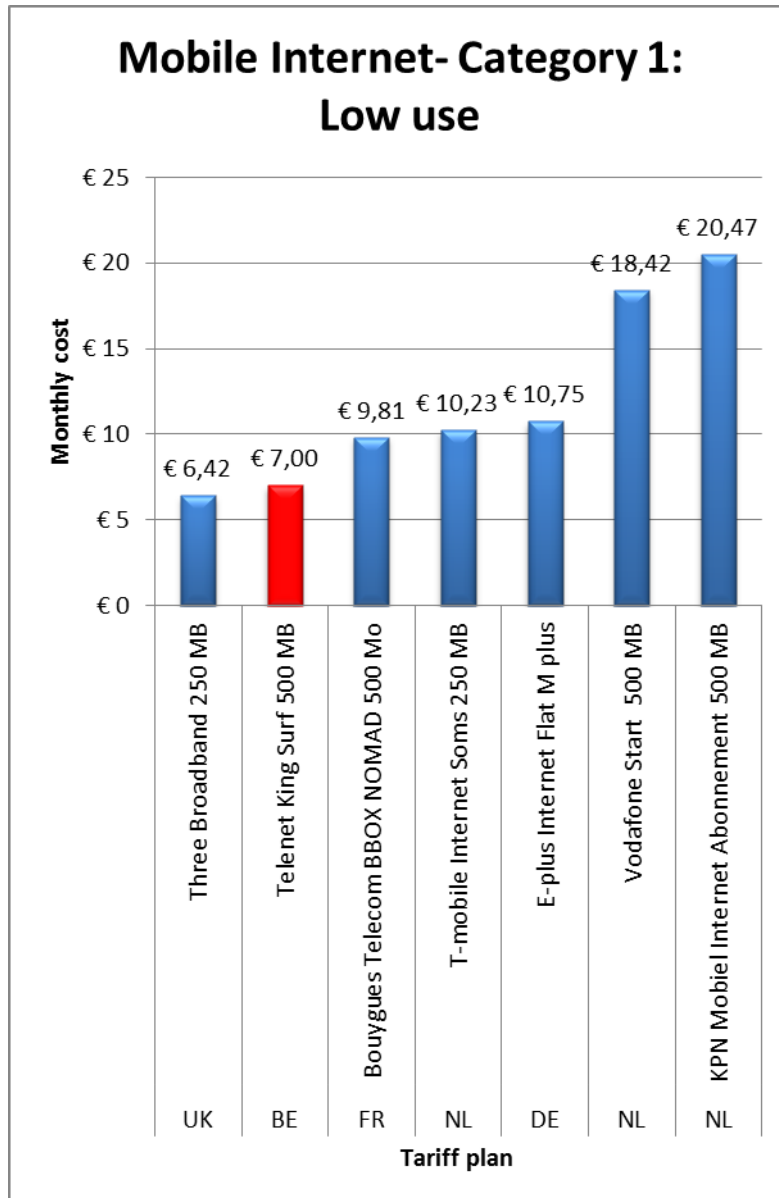


Figure 53: Comparison tariff plans for mobile Internet category 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

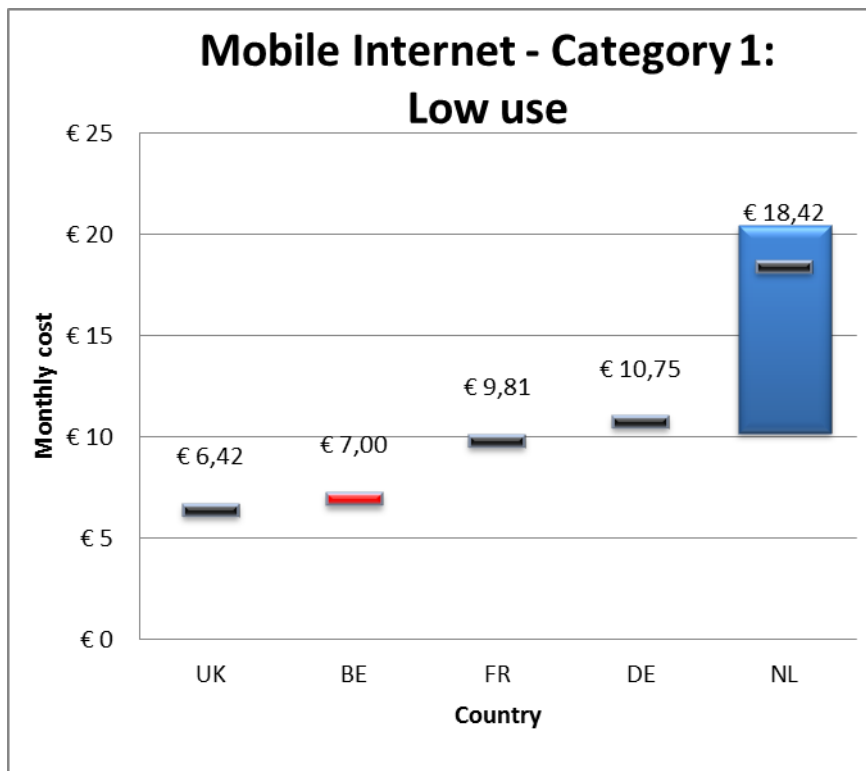


Figure 54: Median price, minimum and maximum price per country for mobile Internet category 1 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

8.2 Category 2: Medium use, medium volume

Category 2: Medium use, medium volume	500 MB < volume ≤ 1 GB
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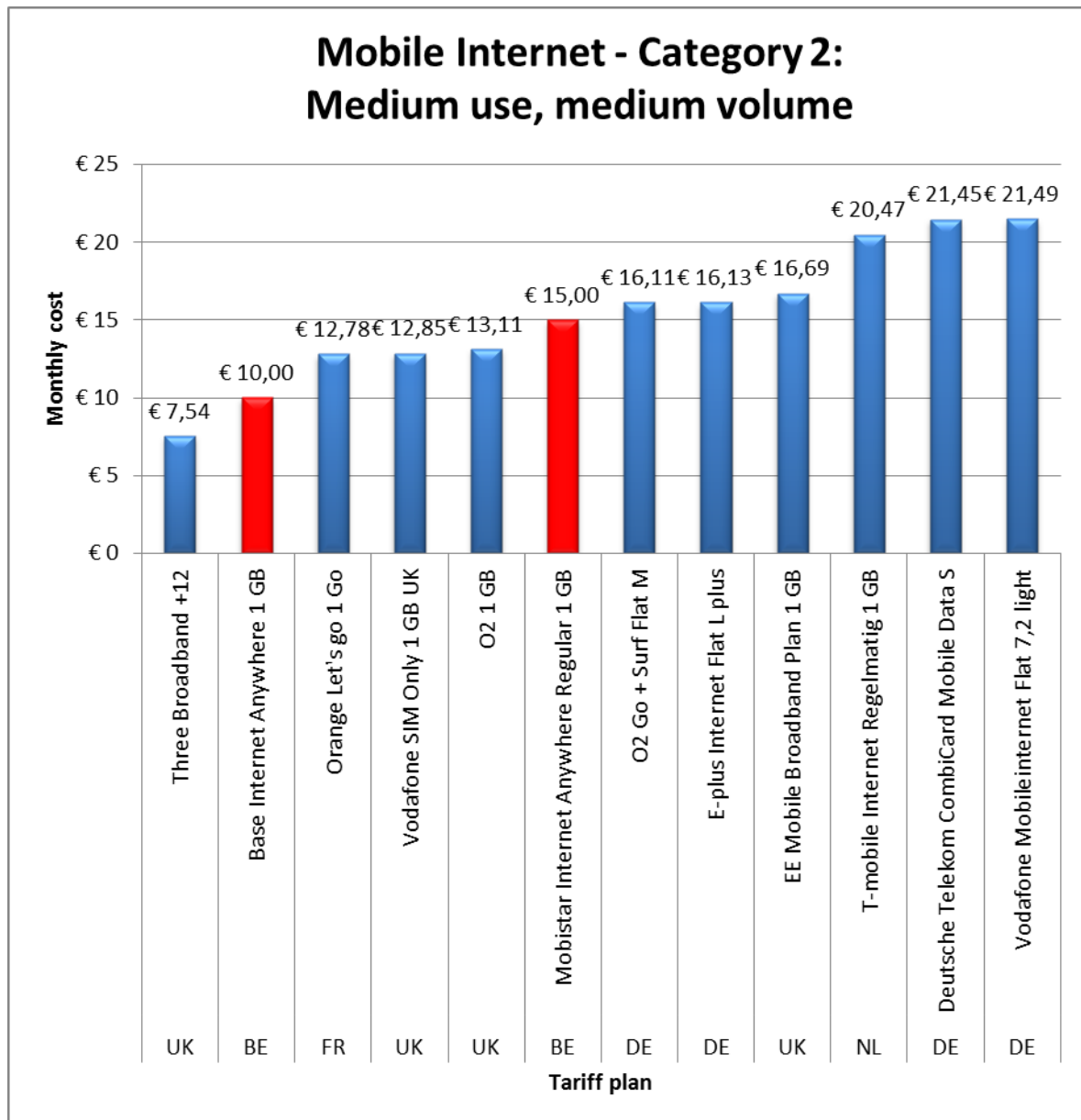


Figure 55: Comparison tariff plans for mobile Internet category 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

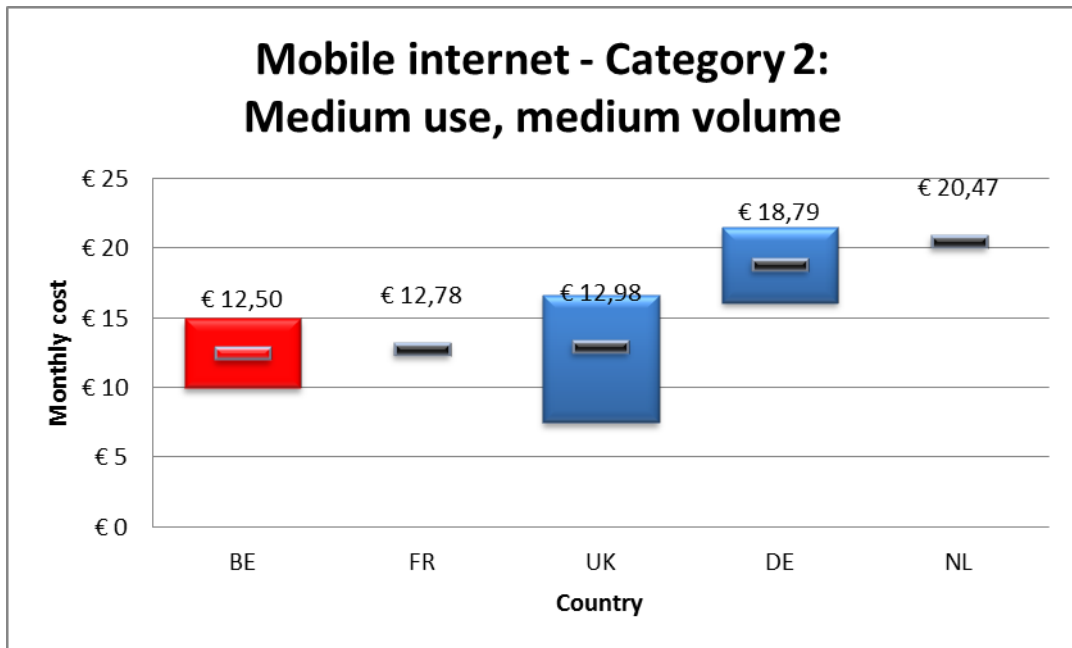


Figure 56: Median price, minimum and maximum price per country for mobile Internet category 2 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

8.3 Category 3: Medium use, high volume

Category 3: Medium use, high volume	1 GB < volume ≤ 2 GB
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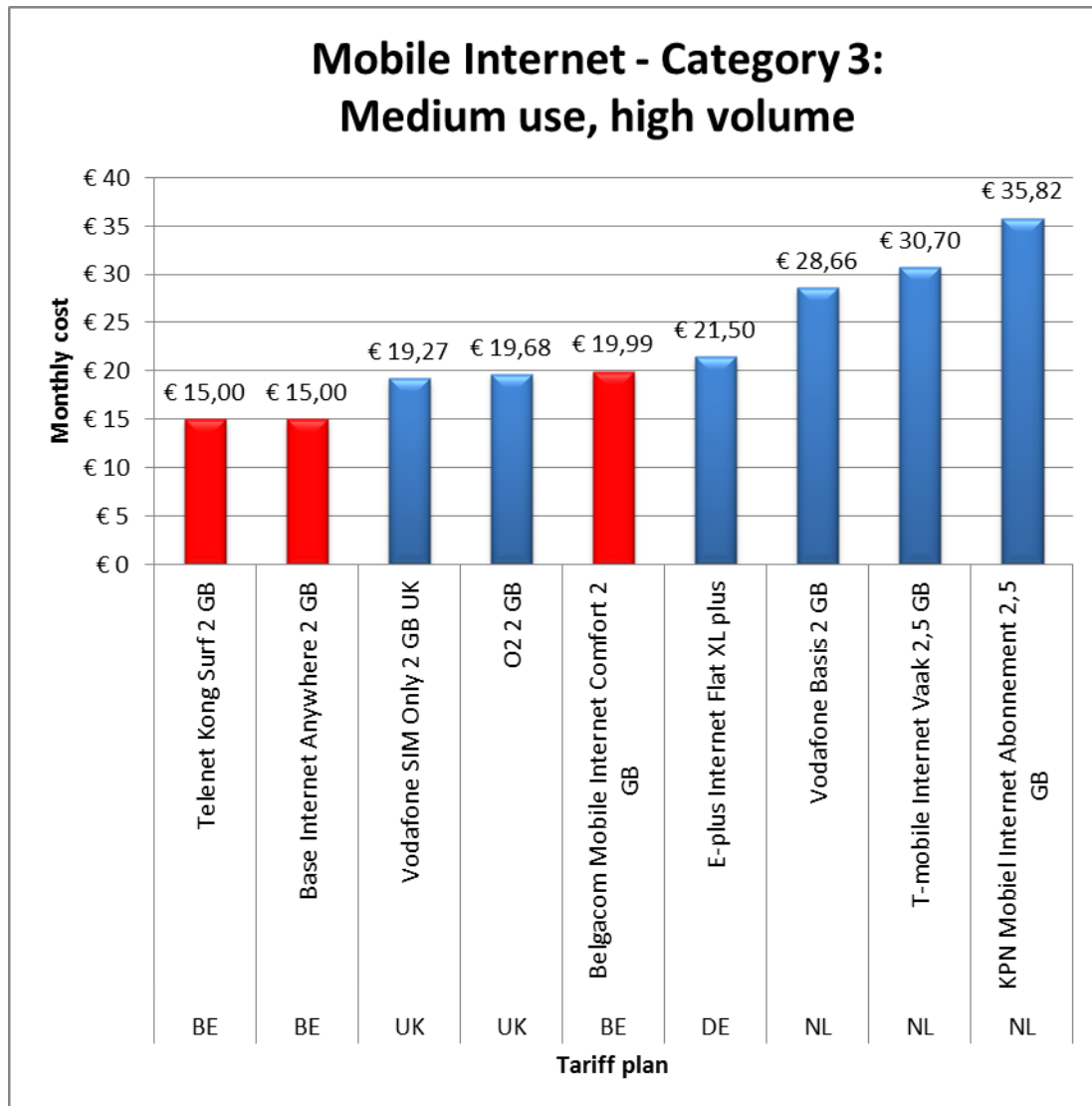


Figure 57: Comparison tariff plans for mobile Internet category 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

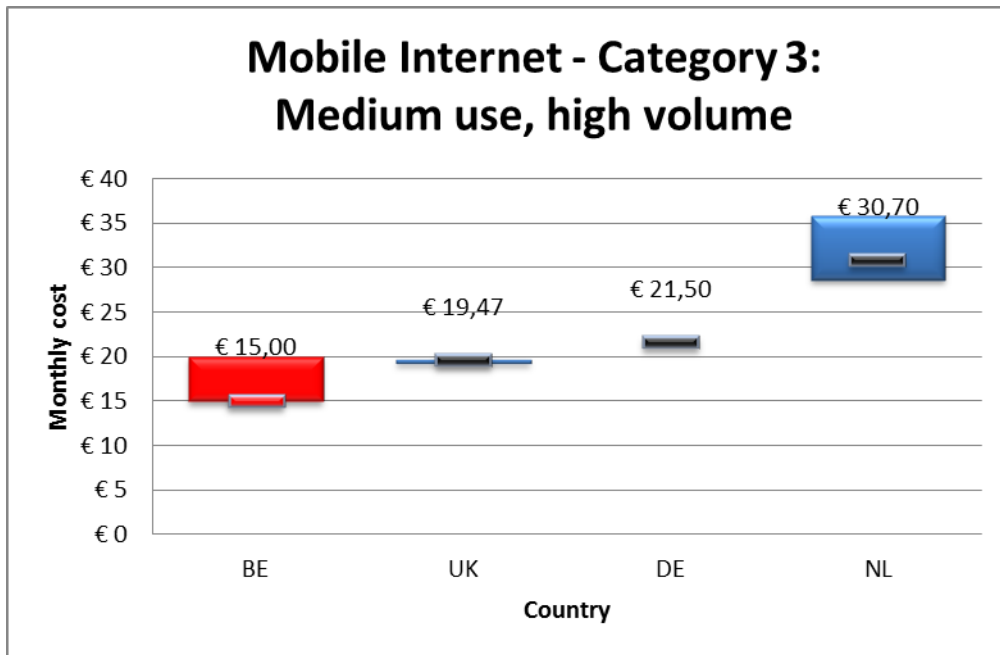


Figure 58: Median price, minimum and maximum price per country for mobile Internet category 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

8.4 Category 4: Intensive use

Category 4: Intensive use	2 GB < volume ≤ 5 GB
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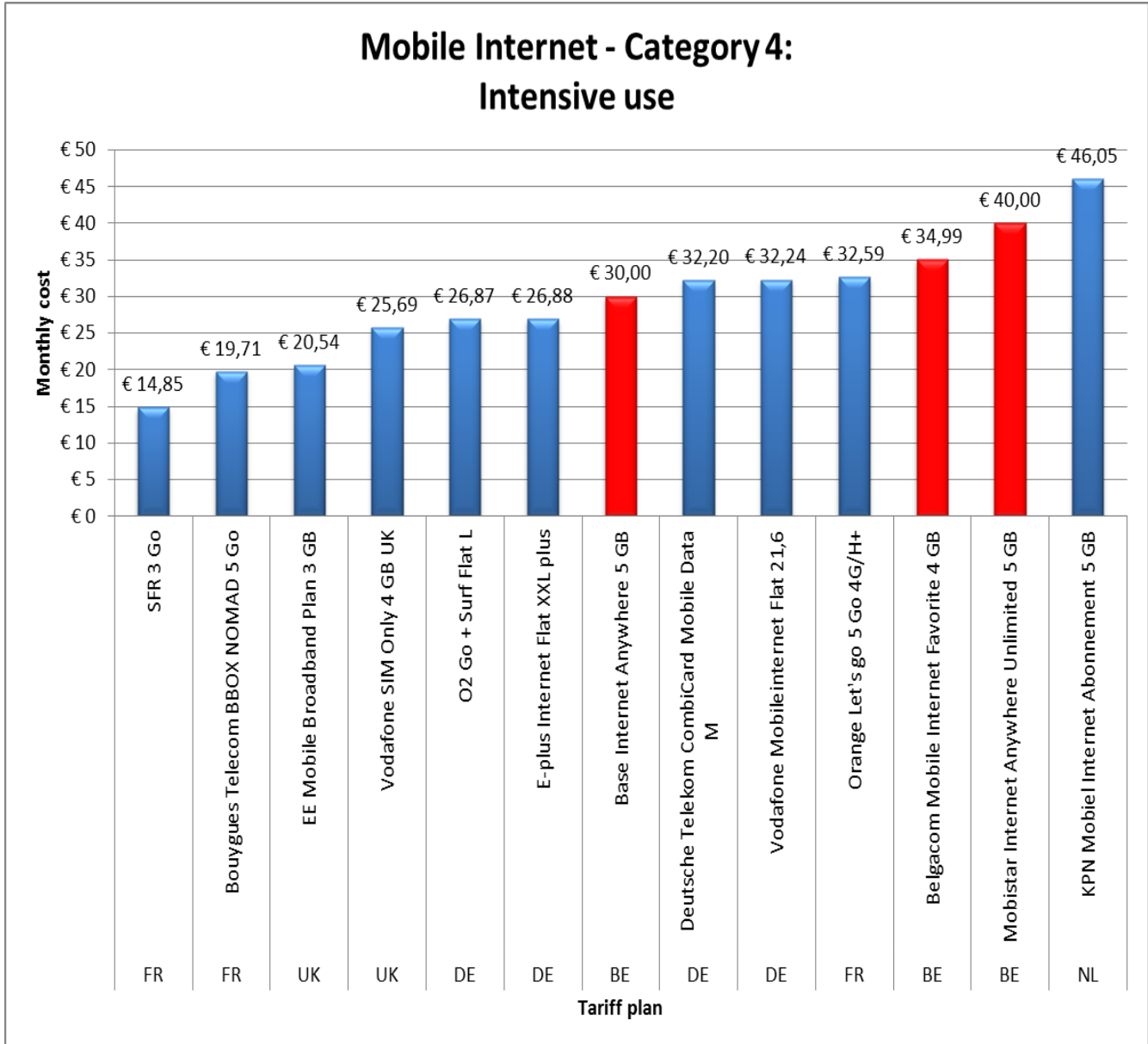


Figure 59: Comparison tariff plans for mobile Internet category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

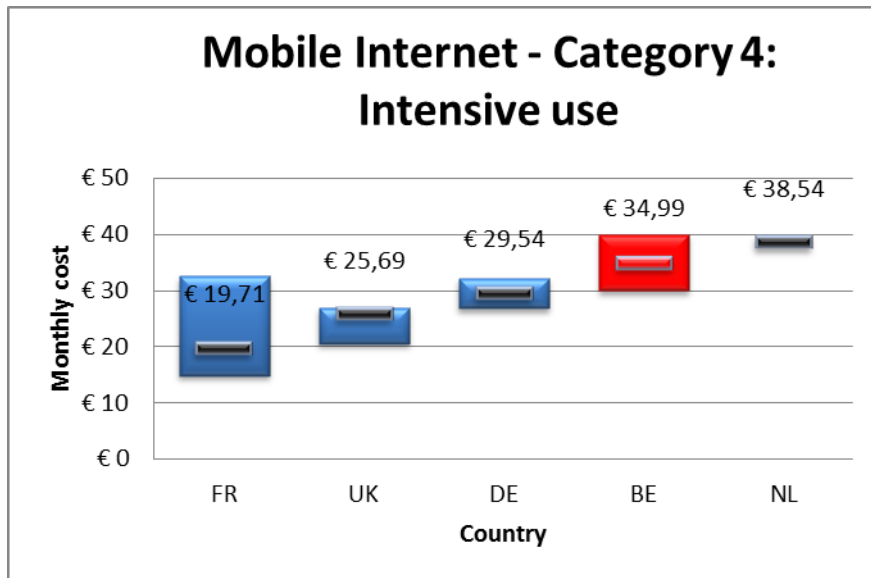


Figure 60: Median price, minimum and maximum price per country for mobile Internet category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

8.5 Summary of the mobile Internet results

115. In general the following trend in mobile Internet (for tablet users) is seen: Compared to its neighbouring countries Belgium scores very well as regards tariff plans for low to medium use. The price level in Belgium is - on average - comparable to France and the United Kingdom. In the intensive use category Belgium has a lesser score: only in the Netherlands does a Belgian consumer have to pay more.
116. Despite the increasing data use in Belgium no tariff plans are offered with a volume of over 5 GB, contrary to the neighbouring countries. This is compensated however, by offering free Wi-Fi or hotspots to customers who have a broadband subscription. For more information, see topic 5.
117. Postpaid tariff plans with a volume under 500 MB are not offered in Belgium either. In the Netherlands for instance, such plans are available. For low use, prepaid tariff plans - which are outside the scope of this study - may offer a solution: the customer pays in the months when he actually uses the services.
118. Finally it should be pointed out that quality parameters, such as download speed and network coverage of the various networks (3G or 4G) have been left out of consideration. For more details about the roll-out of those various networks, see topic 4.

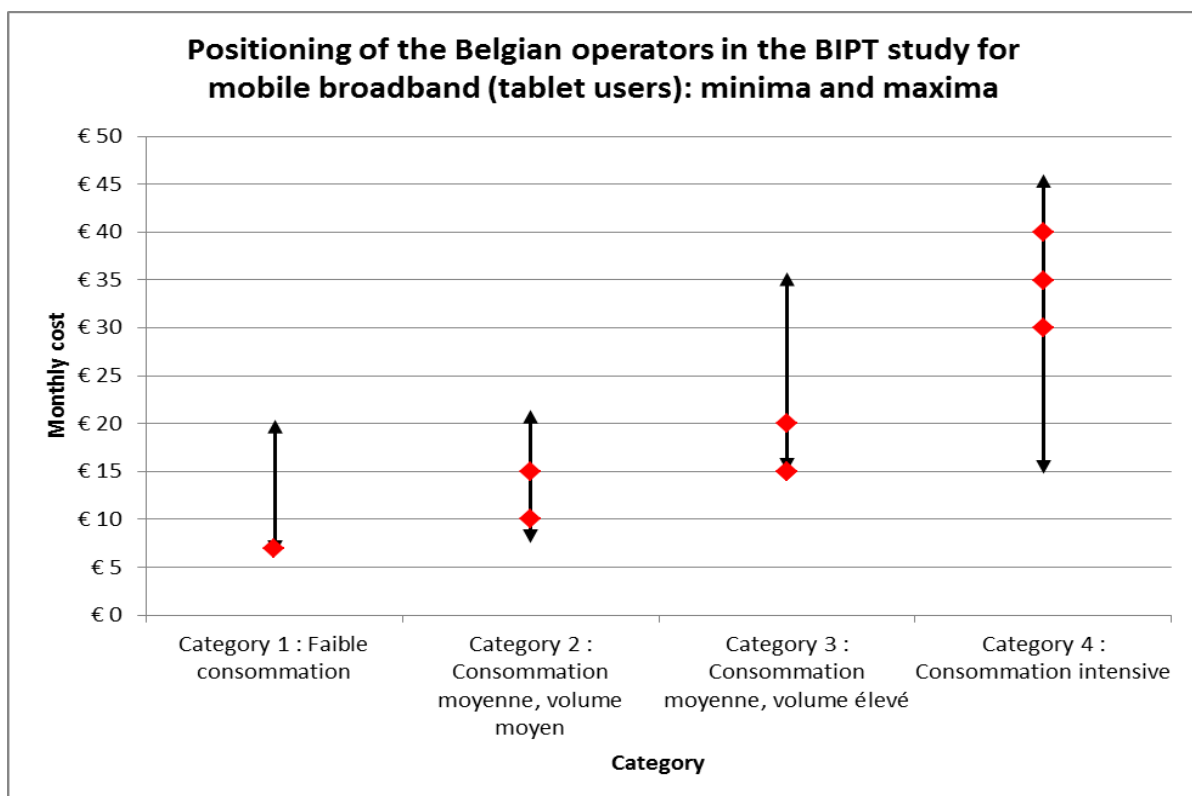


Figure 61: Overview of the minimum and maximum price observed in the five countries, per category, mobile broadband for tablet users (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

9 DUAL PLAY (BROADBAND + TV)

9.1 Category 1: Low speed

Category 1	
Internet part of the bundle: Low speed	
	Speed < 30 Mbps, Volume undetermined
TV part of the bundle	
	No requirements

119. In this category no tariff plans have been observed for the selected Belgian operators.

9.2 Category 2: Medium speed, medium volume

Category 2	
Internet part of the bundle: Average speed	30 Mbps ≥ Speed < 100 Mbps, Volume ≥ 100 GB
TV part of the bundle	No requirements

9.3 Category 3: Medium speed, unlimited volume

Category 3	
Internet part of the bundle: Average speed	30 Mbps ≥ Speed < 100 Mbps, Volume unlimited
TV part of the bundle	No requirements

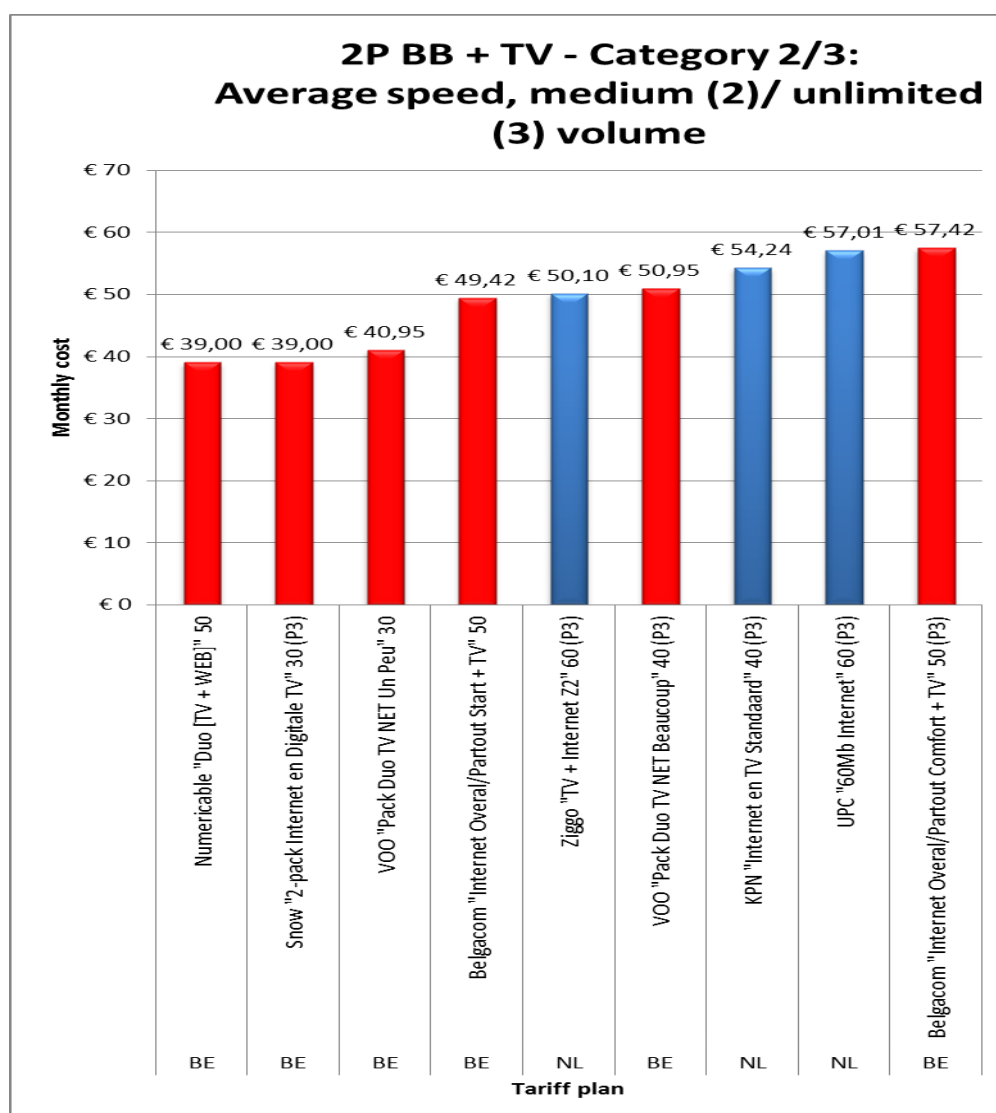


Figure 62: Comparison tariff plans for dual play (broadband + TV) categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

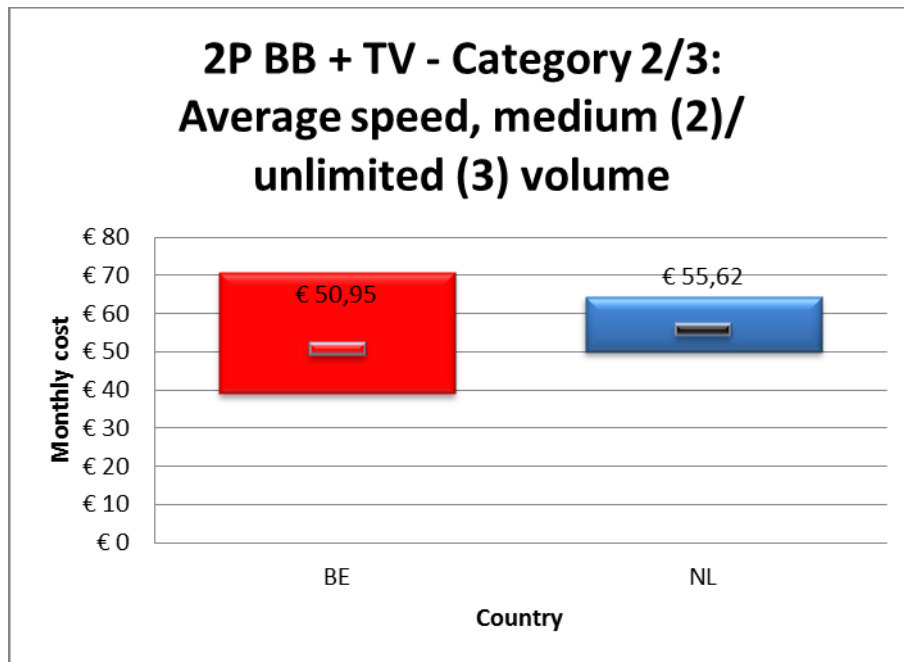


Figure 63: Median price, minimum and maximum price per country for dual play (broadband + TV) categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

9.4 Category 4: High speed

Category 4	
Internet part of the bundle: High speed	Speed ≥ 100 Mbps, Volume unlimited
TV part of the bundle	No requirements

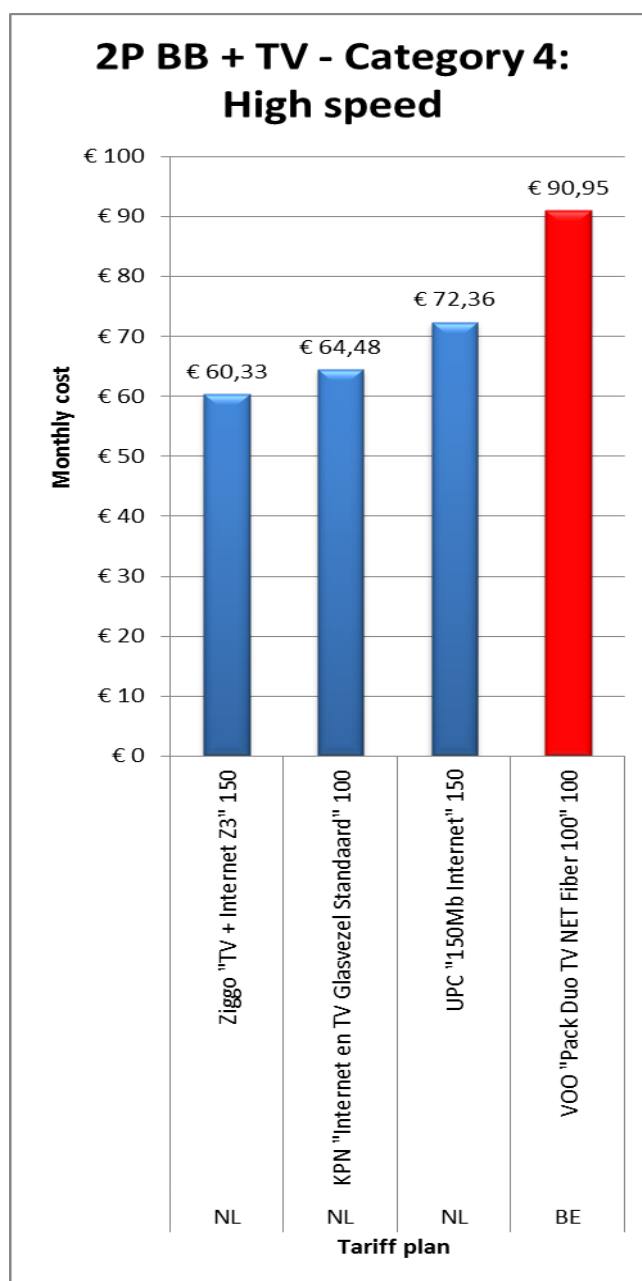


Figure 64: Comparison tariff plans for dual play (broadband + TV) category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

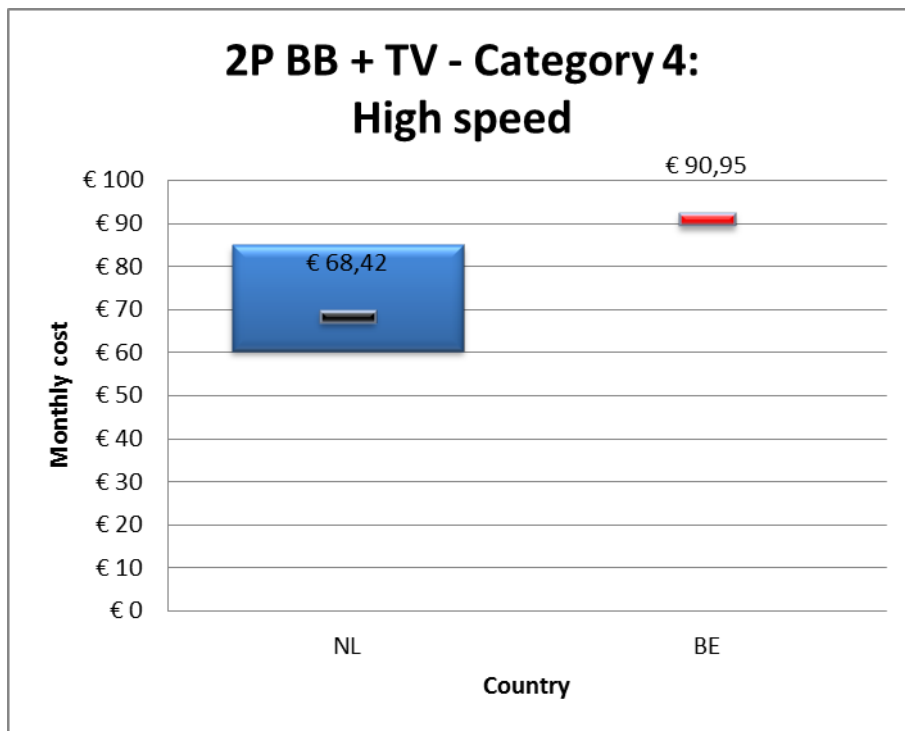


Figure 65: Median price, minimum and maximum price per country for dual play (broadband + TV) category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

9.5 Summary of the results for dual play (broadband and television)

120. The Belgian operators analysed offer dual play (broadband and television) at a broadband bit rate of 30 Mbps minimum. Besides Belgium this dual play combination is only offered by Dutch operators in categories 2 and 3. The Belgian offer is on average, clearly more competitive within this comparison exercise.
121. In Belgium dual play with an extra fast broadband component (download speed of at least 100 Mbps) is only offered by VOO. For this category too, comparison is only possible with Dutch tariff plans, all of which are cheaper.
122. This dual play product was not examined within the framework of the 2012 price study.
123. The results mentioned above should be differentiated based on the findings concerning regional availability of broadband and the differences between the speed advertised and the actual speed (topics 1 and 2). Topic 3 is also relevant in this context. Topics 6 and 7 provide important background information regarding bundled offers and the (little) willingness of customers to switch (bundles) operators.

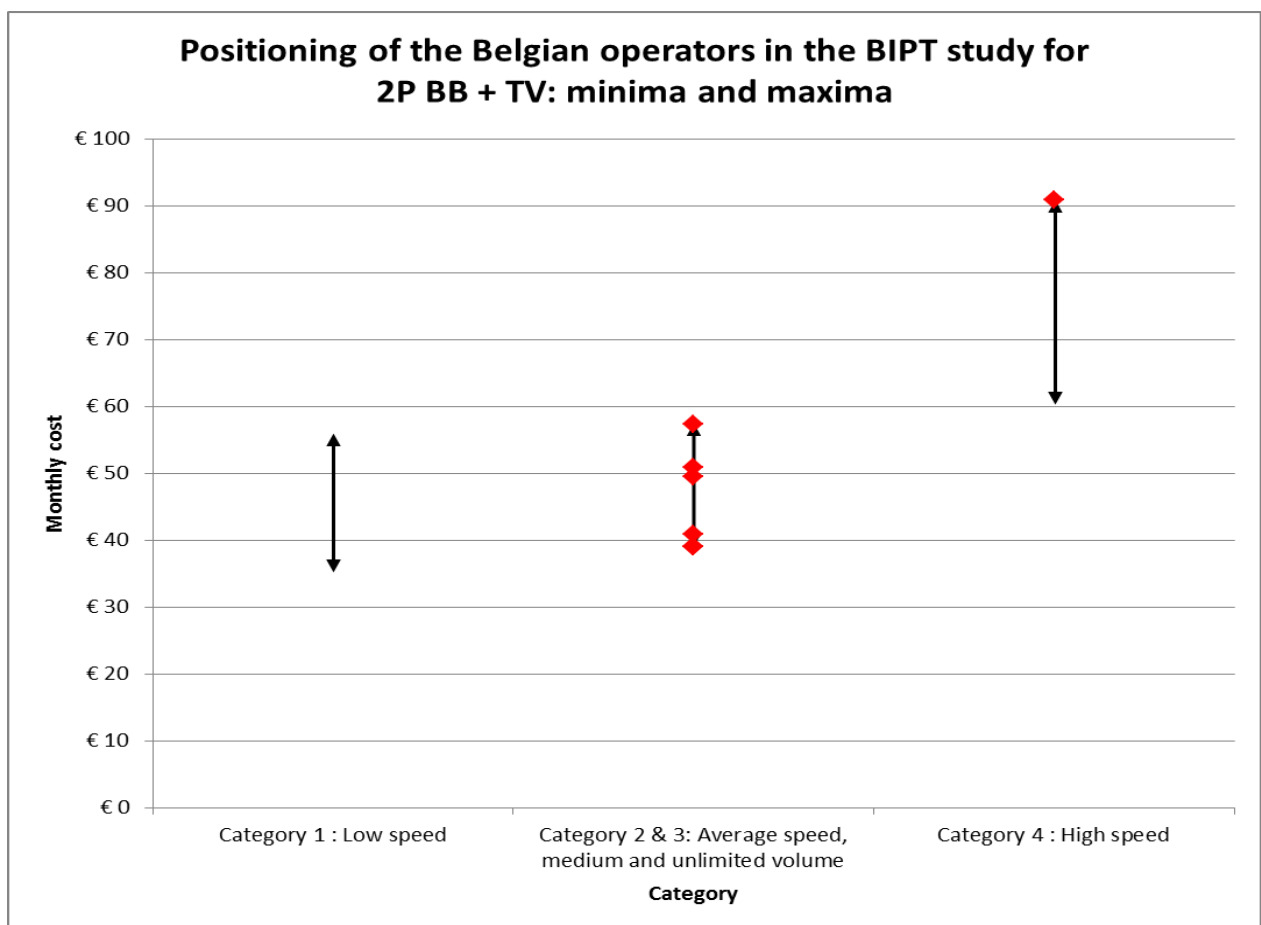


Figure 66: Overview of the minimum and maximum price observed in the five countries, per category, dual play (broadband and television) - (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

10 DUAL PLAY (BROADBAND + FIXED TELEPHONY)

10.1 Category 1: Low speed

Category 1					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Low speed					
Speed < 30 Mbps, Volume undetermined					

124. In this category no tariff plans have been observed for the selected Belgian operators.

10.2 Category 2: Medium speed, medium volume

Category 2					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Average speed					
30 Mbps ≥ Speed < 100 Mbps, Volume ≥ 100 GB					

10.3 Category 3: Medium speed, unlimited volume

Category 3					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Average speed					
30 Mbps ≥ Speed < 100 Mbps, Volume unlimited					

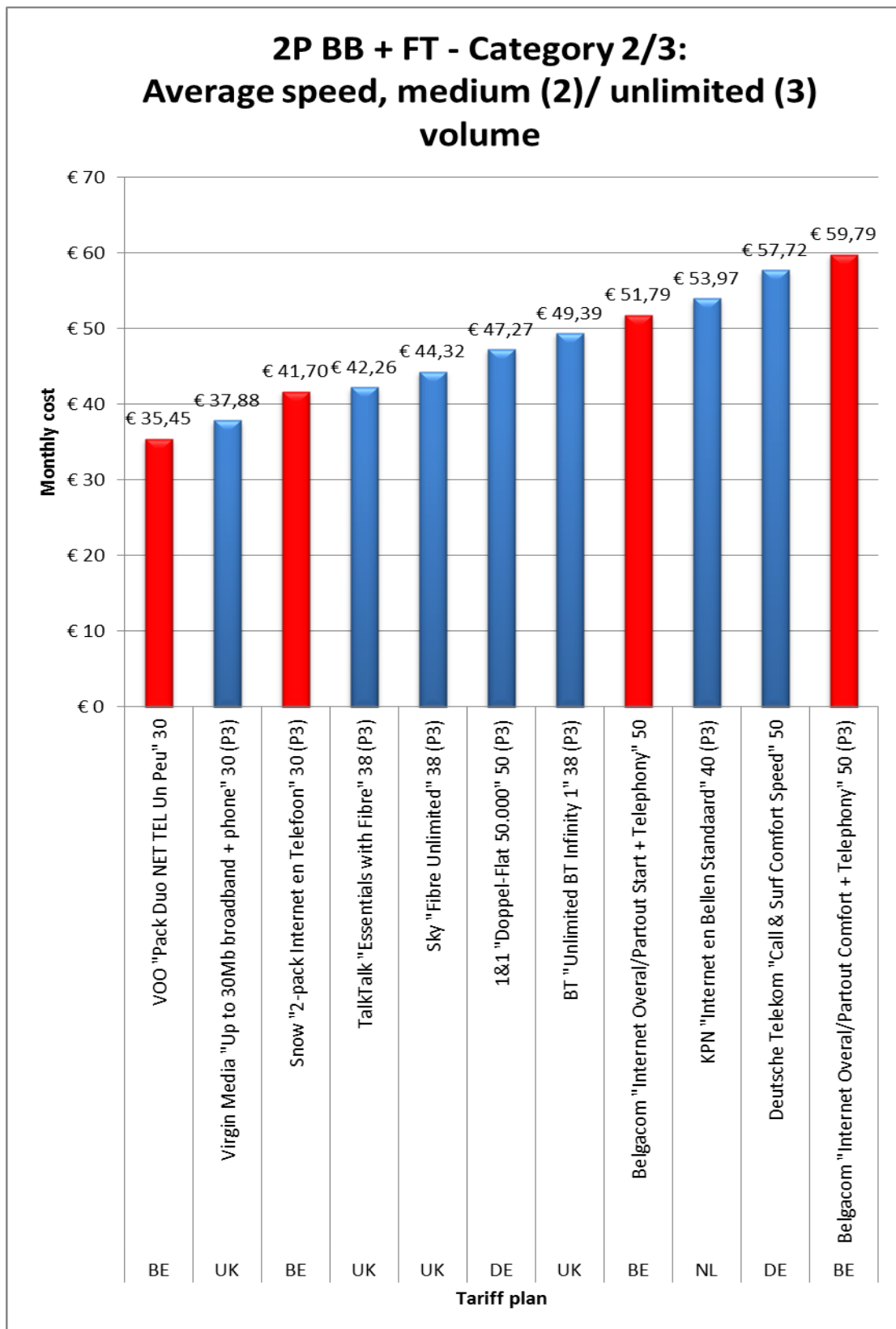


Figure 67: Comparison tariff plans for dual play (broadband + fixed telephony) categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

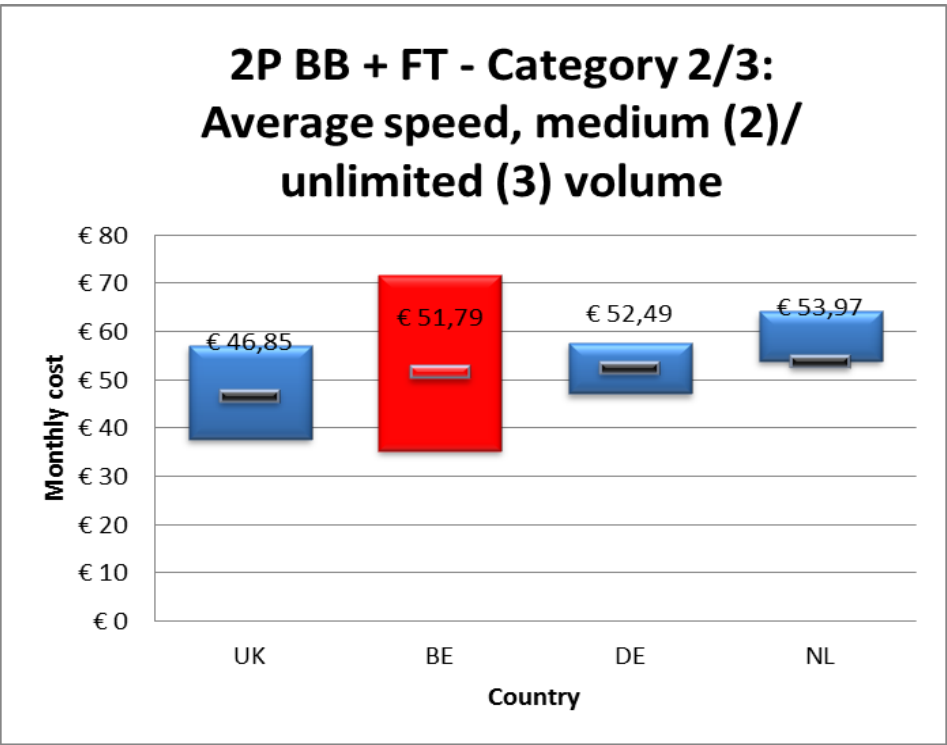


Figure 68: Median price, minimum and maximum price per country for dual play (broadband + fixed telephony) categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

10.4 Category 4: High speed

Category 4					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: High speed					
Speed \geq 100 Mbps, Volume unlimited					

125. In this category no tariff plans have been observed for the selected Belgian operators.

10.5 Summary of the results for dual play (broadband and fixed telephony)

126. The Belgian operators analysed only offer dual play (broadband and fixed telephony) at a broadband download speed of 30 to 100 Mbps. Based on the median observation Belgium (with a large price range) takes a relatively favourable second place within the group of four countries where this dual play combination is offered in categories 2 and 3, closely followed by Germany and the Netherlands. The median average is lower in the United Kingdom, although in this comparison the cheapest tariff plan was observed in Belgium.
127. This dual play product was not examined within the framework of the 2012 price study.
128. The results mentioned above should be differentiated based on the findings concerning regional availability of broadband and the differences between the speed advertised and the actual speed (topics 1 and 2). Topic 3 is also relevant in this context. Topics 6 and 7 provide important background information regarding bundled offers and the (little) willingness of customers to switch (bundles) operators.

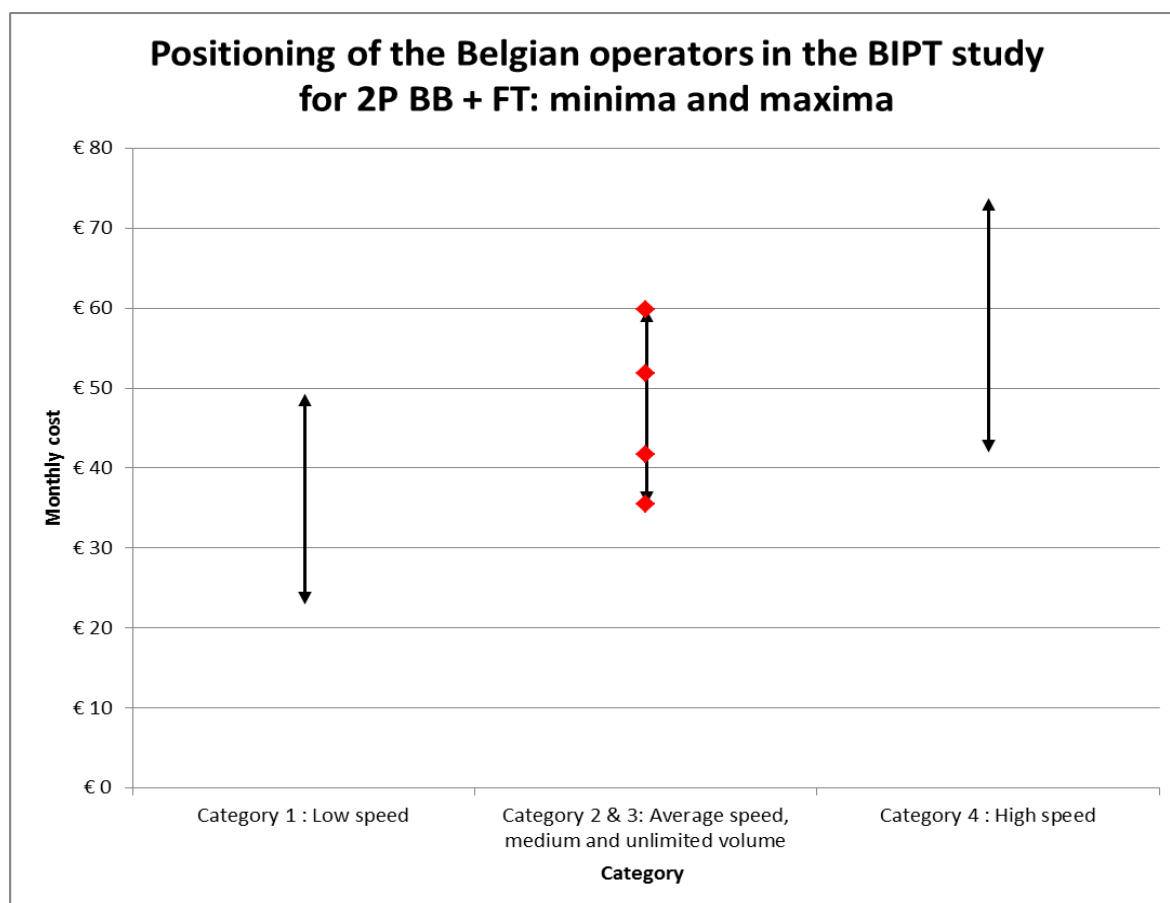


Figure 69: Overview of the minimum and maximum price observed in the five countries, per category, dual play (broadband and fixed telephony) - (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

11 TRIPLE PLAY (BROADBAND + TV + FIXED TELEPHONY)

11.1 Category 1: Low speed

Category 1					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Low speed					
Speed < 30 Mbps, Volume undetermined					
TV part of the bundle					
No requirements					

129. In this category no tariff plans have been observed for the selected Belgian operators.

11.2 Category 2: Medium speed, medium volume

Category 2					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Average speed					
30 Mbps \geq Speed < 100 Mbps, Volume \geq 100 GB					
TV part of the bundle					
No requirements					

11.3 Category 3: Medium speed, unlimited volume

Category 3					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: Average speed					
30 Mbps \geq Speed < 100 Mbps, Volume unlimited					
TV part of the bundle					
No requirements					

130. In this category no French offers have been found. The French operators selected in this comparison offer no VDSL (minimum speed of 30 Mbps). ADSL is available, though; these tariff plans belong to category 1. Some French operators also have offers with optical fibre, which belong to category 4 (minimum speed of 100 Mbps). Figure 75 gives a view of a number of French quadruple play offers. They are very attractively priced.

3P BB + TV + FT: Category 2/3: Average speed, medium (2)/ unlimited (3) volume

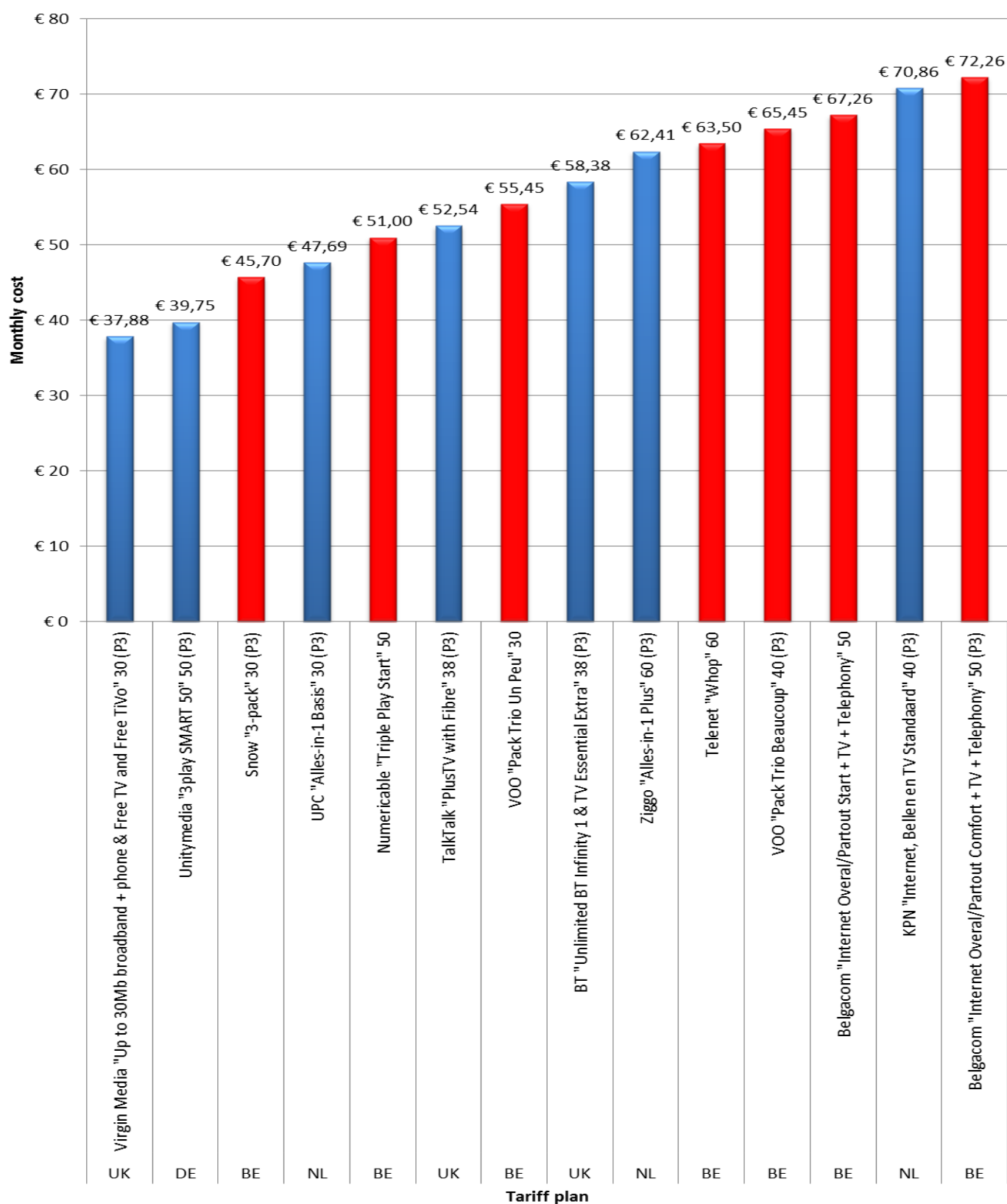


Figure 70: Comparison tariff plans for triple play categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

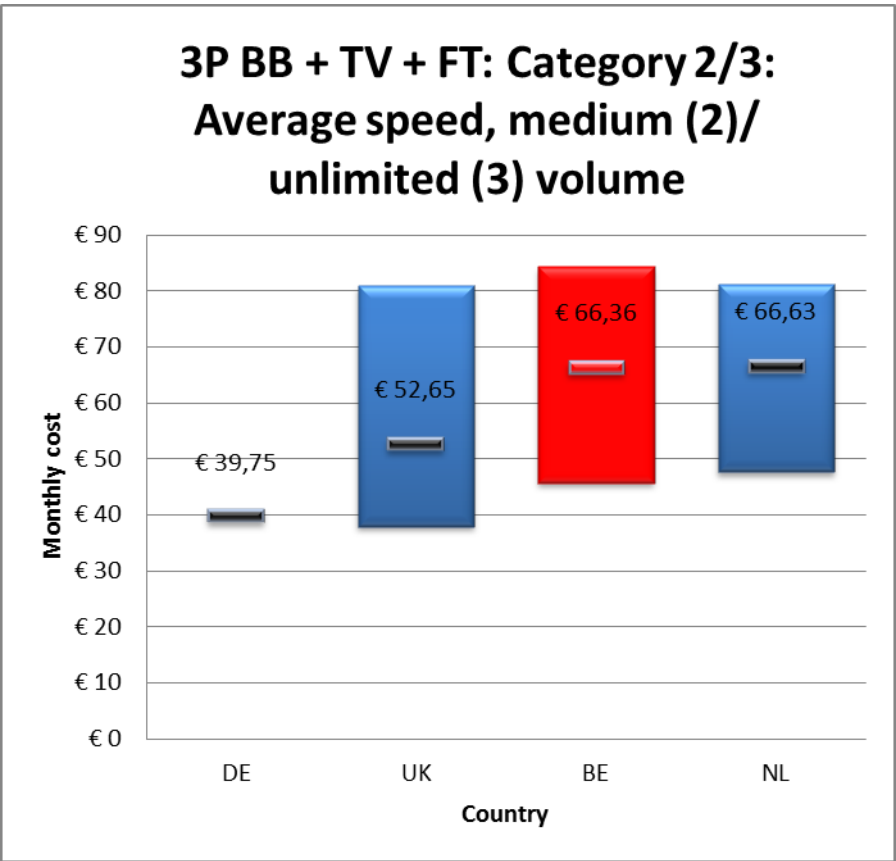


Figure 71: Median price, minimum and maximum price per country for triple play (broadband + fixed telephony) categories 2 and 3 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

11.4 Category 4: High speed

Category 4					
Fixed telephony part of the bundle: Low use (25 calls)					
	Destination	Number of calls	Peak	Off-peak	Weekend
60%	Fixed	15	40%	25%	35%
40%	Mobile	10	55%	20%	25%
Internet part of the bundle: High speed					
Speed \geq 100 Mbps, Volume unlimited					
TV part of the bundle					
No requirements					

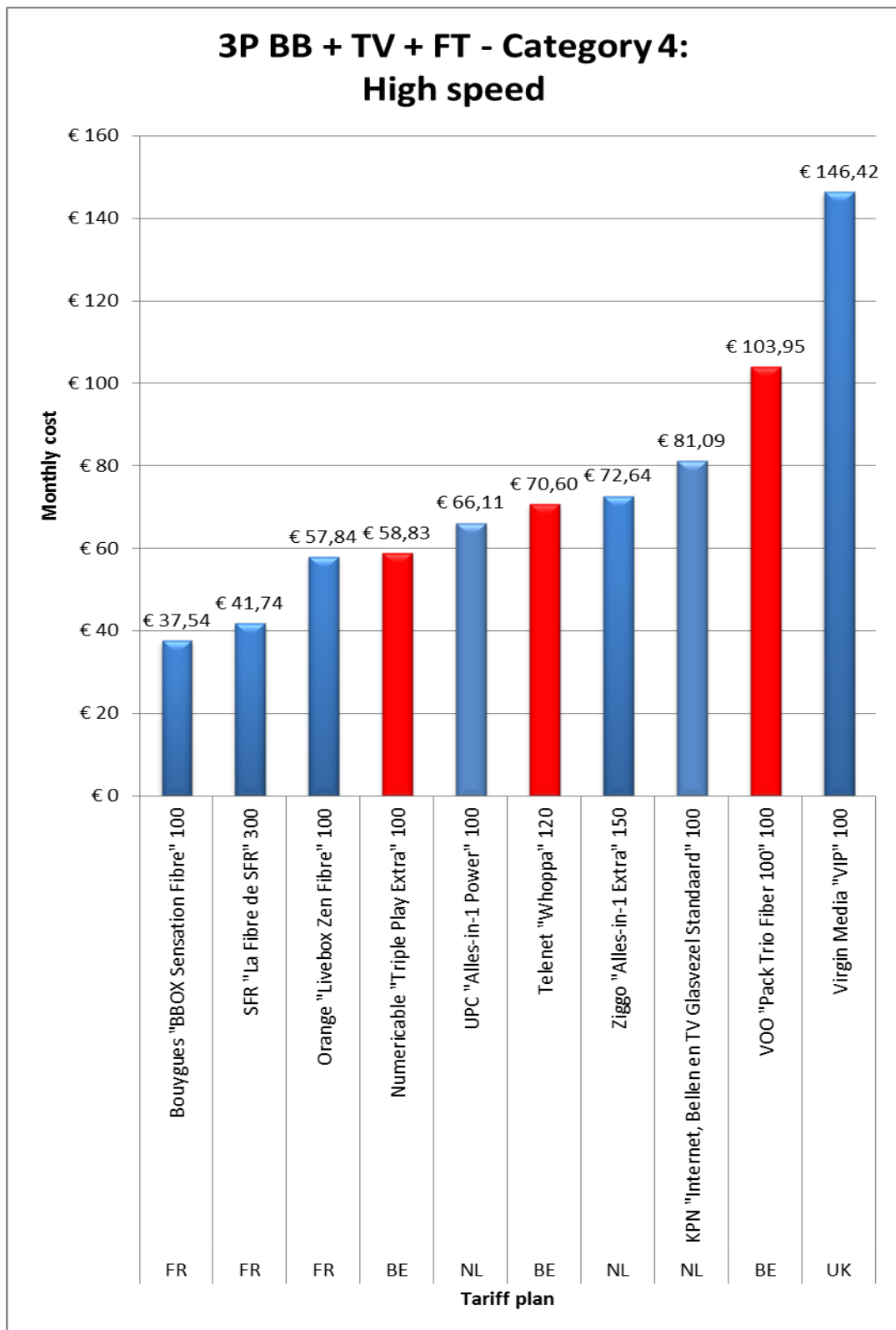


Figure 72: Comparison tariff plans for triple play category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

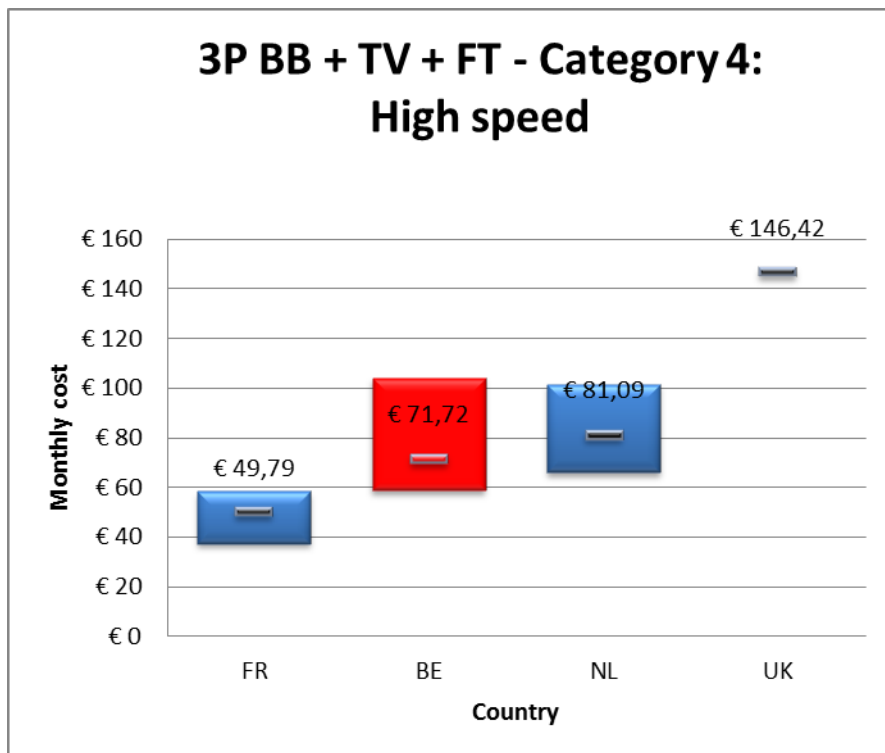


Figure 73: Median price, minimum and maximum price per country for triple play (broadband + fixed telephony) category 4 (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

11.5 Summary of the results for triple play (broadband, TV and fixed telephony)

131. The Belgian operators analysed only offer triple play with a broadband bit rate of 30 Mbps minimum. Based on the median observation Belgium takes a less favourable third position within the group of four countries where triple play is offered for categories 2 and 3. No Belgian tariff plans can be found at the extreme bottom side of the price range. The United Kingdom is strongly represented in these categories, generally boasting reasonable tariff plans. The situation in the Netherlands is comparable to the one in Belgium, although the price range is a bit smaller. Germany scores well, but it is only represented with one tariff plan. There are no comparable offers in France; VDSL offers are very scarce over there (also see topic 1).
132. In France triple play with an ultrafast broadband component (download speed of at least 100 Mbps) is offered at extremely competitive prices. The availability of that tariff plan in France is very limited though (see topic 1). Belgium follows in second place with significantly cheaper tariff plans than in the Netherlands, which is third. The only (high-end) tariff plan present for the United Kingdom is hardly representative. Belgium's position has improved compared to last year in that more Belgian tariff plans are situated in the bottom half of the price range.
133. However, a comparison with the 2012 edition is not evident, considering the change in categorising the triple play offers and the change of methodology in 2013. Indeed, this year, the total usage cost has been included for a fixed telephony profile 1. Here too, it should be mentioned that generally speaking the consumer gets more value for his money as regards the broadband component.
134. The results mentioned above should be differentiated based on the findings concerning regional availability of broadband and the differences between the speed advertised and the actual speed (topics 1 and 2). Topic 3 is also relevant in this context. Topics 6 and 7 provide important background information regarding bundled offers and the (little) willingness of customers to switch (bundles) operators.

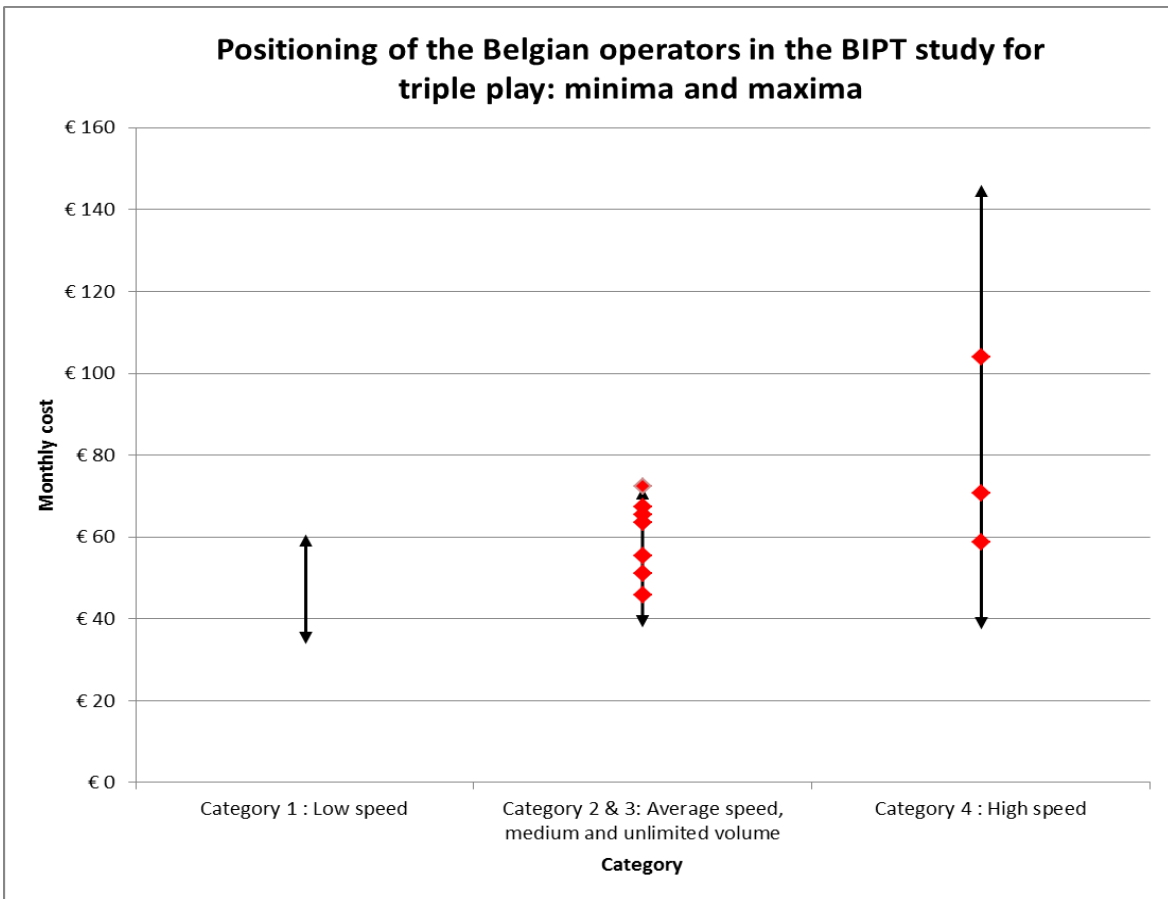


Figure 74: Overview of the minimum and maximum price observed in the five countries, per category, triple play (broadband, television and fixed telephony). (Source: own calculations, data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

12 QUADRUPLE PLAY (BROADBAND + TV + FIXED TELEPHONY + MOBILE TELEPHONY)

Country	Operator and Tariff Plan	Price PPP	DL Speed (Mbps)	Volume (GB)	# TV stations	Mobile Telephony
FR	Free "Freebox (Zones Dégrouppées) with TV & Free Forfait 12€"	€ 34,64	28	unlimited	185	unlimited calls
FR	Numerical "Start Mobile"	€ 42,49	20	unlimited	25	unlimited calls and text messages
FR	Bouygues "Forfait 2h Carte Seul & BBOX" (zone dégroupée)	€ 43,83	20	unlimited	150	120 call minutes
FR	Numerical "Power"	€ 44,47	200	unlimited	240	unlimited calls and text messages
DE	Unitymedia "3play PLUS 100"	€ 47,28	100	unlimited	70+	unlimited calls to Unitymedia and unlimited mobile internet
FR	Bouygues "Forfait 2h Carte Seule" & BBOX Sensation Fibre"	€ 47,43	100	unlimited	135	240 call minutes
FR	Bouygues "Forfait 2h Carte Seule & BBOX Sensation" (zone dégroupée)	€ 48,78	20	unlimited	160	180 call minutes
FR	SFR "La Box de SFR" (zone dégroupée) & Formule Carré 2h + 50 Mo"	€ 52,63	25	unlimited	170	120 call minutes, unlimited text messages, 50MB mobile internet
FR	Numerical "Power 4"	€ 53,39	200	unlimited	240	unlimited calls and text messages
FR	Numerical "Power+Family"	€ 54,38	200	unlimited	280	unlimited calls and text messages
BE	Numerical "Triple Play Start & Mobile Start"	€ 55,95	50	100	100	60 call minutes, 50 text messages, 5MB mobile internet
NL	Tele2 "Glasvezel"	€ 57,27	40	unlimited	40+	100 call minutes or text messages in the first year, thereafter €3/MB
DE	Unitymedia "3play PREMIUM 150"	€ 58,03	150	unlimited	75+	unlimited calls to Unitymedia and unlimited mobile internet
UK	Virgin Media "Up to 30Mb broadband + phone & Free TV and Free TiVo & Mobile"	€ 58,36	30	unlimited	60+	100 call minutes, unlimited text messages
NL	Tele2 "Glasvezel"	€ 59,83	60	unlimited	40+	100 call minutes or text messages in the first year, thereafter €3/MB
FR	Orange "Livebox Zen - Open Mini"	€ 60,90	20	unlimited	160	60 call minutes, unlimited text messages, 50MB mobile internet
BE	Numerical "Triple Play Extra & Mobile Start"	€ 63,78	100	unlimited	130	60 call minutes, 50 text messages, 5MB mobile internet
UK	Virgin Media "Up to 60Mb broadband + phone & Free TV and Free TiVo & Mobile"	€ 64,78	60	unlimited	60+	100 call minutes, unlimited text messages
BE	VOO "Pack Trio Un Peu & Toudou"	€ 67,45	30	100	81	60 call minutes, unlimited text messages, 60MB mobile internet
NL	Tele2 "Glasvezel"	€ 67,51	100	unlimited	40+	100 call minutes or text messages la première année, après €3/MBis
NL	Ziggo "Alles-in-1 Basis & Mobiel Heel Veel"	€ 67,53	20	unlimited	60	300 call minutes or text messages, 1GB mobile internet
UK	Virgin Media "Essential & Mobile"	€ 73,13	30	unlimited	100+	100 call minutes, unlimited text messages
NL	KPN "Internet, Bellen en TV/Instap & Budget 100"	€ 73,42	8	unlimited	71	200 call minutes of text messages
BE	Telenet "Whop & King"	€ 75,35	100	unlimited	75	150 call minutes, 10,000 text messages, 1GB mobile internet
FR	Numerical "Power+Extra"	€ 76,17	200	unlimited	300	unlimited calls and text messages
BE	VOO "Pack Trio Beauoup & Toudou"	€ 77,45	40	unlimited	81	60 call minutes, unlimited text messages, 60MB mobile internet
NL	Ziggo "Alles-in-1 Plus & Mobiel Heel Veel"	€ 77,76	60	unlimited	60	300 call minutes or text messages, 1GB mobile internet
BE	Numerical "Triple Play Max & Mobile Start"	€ 77,78	200	unlimited	130	60 call minutes, 50 text messages, 5MB mobile internet
FR	Orange "Livebox Play - Open Play"	€ 78,33	20	unlimited	160	unlimited calls and text messages, 3GB mobile internet
BE	Belacom "Internet/Parlout + TV + Telephony Comfort + Mobile"	€ 82,26	50	unlimited	70+	150 call minutes, unlimited text messages
NL	KPN "Internet, Bellen en TV/Standaard & Budget 100"	€ 83,65	40	unlimited	71	200 call minutes or text messages
NL	KPN "Internet, Bellen en TV/Glasvezel Instap & Budget 100"	€ 83,65	50	unlimited	71	200 call minutes or text messages
BE	Telenet "Whop & King"	€ 85,60	120	unlimited	75	150 call minutes, 10,000 text messages, 1GB mobile internet
BE	VOO "Pack Trio Passionément & Toudou"	€ 85,95	50	unlimited	81	60 call minutes, unlimited text messages, 60MB mobile internet
BE	Belacom "Internet/Parlout + TV + Telephony Start + Mobile"	€ 87,26	50	150	70+	240 call minutes, unlimited text messages
NL	Ziggo "Alles-in-1 Extra & Mobiel Heel Veel"	€ 88,00	150	unlimited	60	300 call minutes or text messages, 1GB mobile internet
NL	KPN "Internet, Bellen en TV/Premium & Budget 100"	€ 93,88	80	unlimited	71	200 call minutes or text messages
NL	KPN "Internet, Bellen en TV/Glasvezel Standaard & Budget 100"	€ 93,88	100	unlimited	71	200 call minutes or text messages
BE	Belacom "Internet/Parlout + TV + Telephony Maxi + Mobile"	€ 94,26	50	unlimited	70+	150 call minutes, unlimited text messages
BE	VOO "Pack Trio A La Polle & Toudou"	€ 95,95	70	unlimited	81	60 call minutes, unlimited text messages, 60MB mobile internet
FR	Numerical "Platinum"	€ 96,97	200	unlimited	320	unlimited calls and text messages
UK	Virgin Media "Premiere & Mobile"	€ 101,39	60	unlimited	200+	100 call minutes, unlimited text messages
NL	KPN "Internet, Bellen en TV/Glasvezel Premium & Budget 100"	€ 114,35	500	unlimited	71	200 call minutes or text messages
BE	VOO "Pack Trio Fiber 100 & Toudou"	€ 115,95	100	unlimited	81	60 call minutes, unlimited text messages, 60MB mobile internet
UK	Virgin Media "VIP & Mobile"	€ 152,85	100	unlimited	225+	100 call minutes, unlimited text messages

Figure 75: Overview of all quadruple play offers, sorted according to price (Source: data collected from operator websites between 6 and 30 August 2013, prices inclusive of VAT, EUR PPP).

13 QUALITATIVE ELEMENTS: TOPICS AND TRENDS

13.1 Topic 1: Broadband Internet (coverage and penetration)

135. Since the end of 2012 almost 95% of European households has a basic Internet access (download speed of 144 Kbps minimum). Only in six EU countries, including Belgium, the Netherlands and the United Kingdom²⁵, coverage is practically 100%. Therefore other countries still have so-called 'white spots', often remote areas where broadband has not (yet) been rolled out completely.
136. Internet is becoming faster and faster. Just over half of the households (54%) has access to fast broadband Internet with a minimum download speed of 30 Mbps²⁶. It is remarkable that access to fast Internet differs enormously from country to country and from region to region. NGA networks allowing of fast Internet are mainly rolled out in densely populated areas.
137. Belgium and its neighbour, the Netherlands, score well as to the "fast Internet available" parameter, because a large portion of available broadband lines are equipped with the NGA technology (both over cable with Docsis 3.0 and over copper with VDSL and FTTx). With its NGA availability of more than 95% Belgium holds third position in the European ranking, preceded by Malta and the Netherlands (see figure 76 below).
138. In all countries NGA coverage in rural areas is lower than in the cities. Therefore, the geographically extensive territories of the United Kingdom, Germany and France are doing significantly worse with an NGA availability of 70%, 66% and 23% of households respectively. It is evident that in the United Kingdom, Germany and especially France the availability of NGA networks for country dwellers is (very) limited, which means that the large majority of the country dwellers do not benefit from fast Internet. In 65% of the rural areas in Belgium NGA has been rolled out (fourth place).

²⁵ The six countries are Belgium, the Netherlands, Cyprus, Luxemburg and the United Kingdom (Source: European Commission, 2013b, "Broadband lines in the EU").

²⁶ Source: idem.

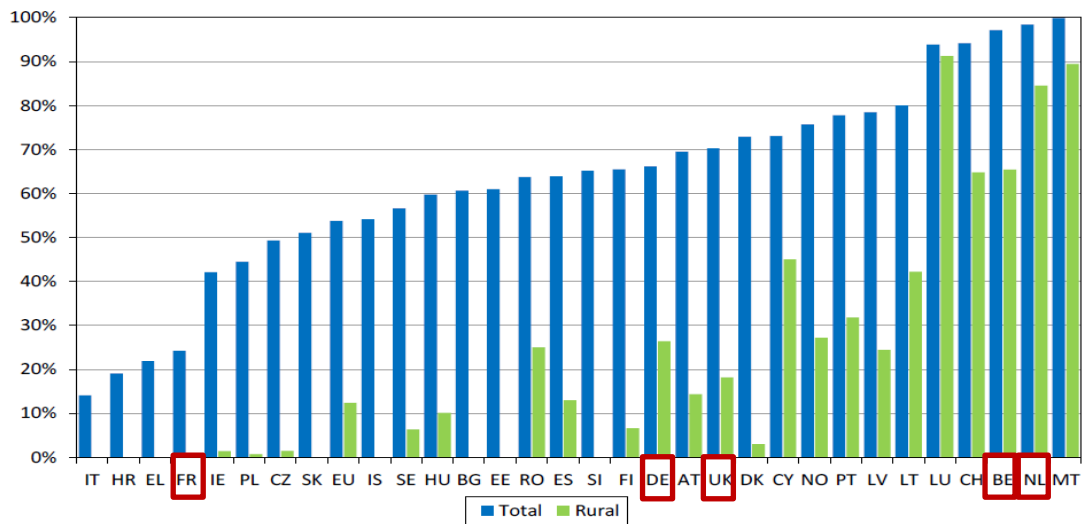


Figure 76: NGA coverage per country expressed in percentage of homes - situation at the end of 2012 (Source: European Commission 2013c, Digital Agenda Scoreboard).

139. Research done by Cullen International confirms the findings mentioned above, as shown in the figure below. NGA network coverage is split up according to the type of operator.

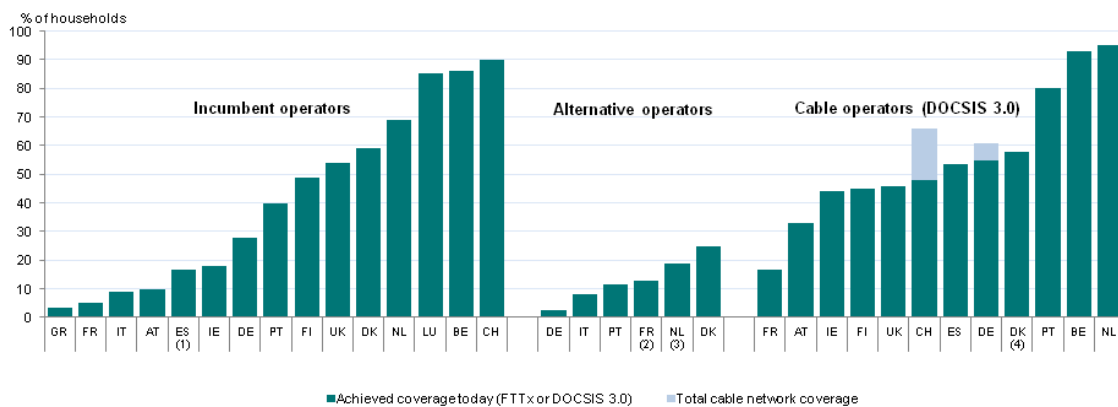


Figure 77: NGA coverage by incumbents, alternative operators and cable operators (Source: Cullen research - Cross Country Analysis, situation May 2013).

140. As a consequence the quality of the offer - in terms of available download speed - varies a lot from one country to another. Regional differences can also be considerable, even within the geographical territory analysed in this price study.

141. Finally it should be pointed out that there is a difference between the number of homes that have broadband access (*homes passed*) and the number of homes connected to the network (*homes connected*) - the latter meaning the homes who actually have a broadband connection.

142. The number of homes who actually have a fast broadband connection - described in the figure below, divided into categories of speed - is very small. Only 4% of the European population has a broadband subscription with a maximum download speed of at least 30 Mbps. In Belgium, that is five times as much. Once again, the Netherlands and Belgium score well compared to the rest of Europe.

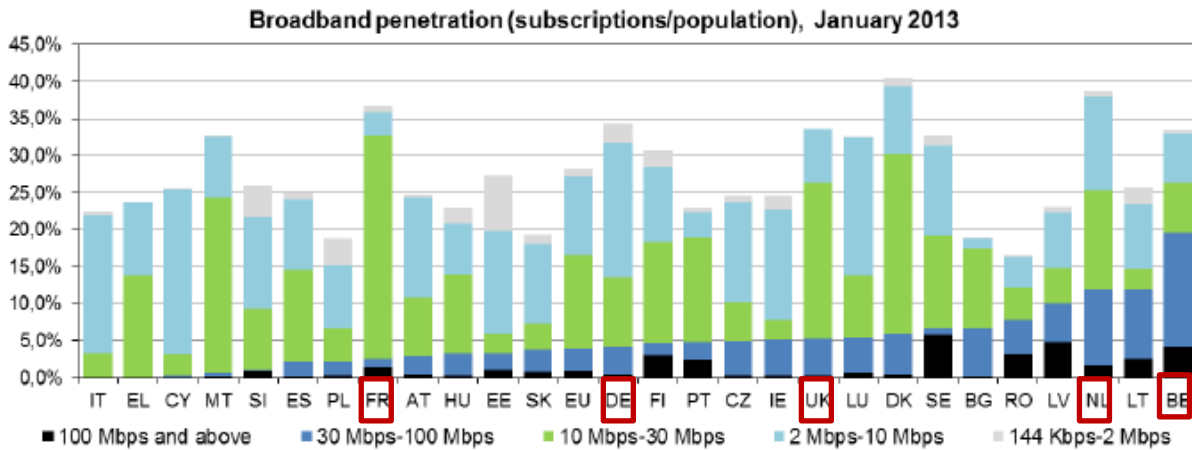


Figure 78: Fixed broadband penetration (subscriptions/population), classified according to maximum download speed, situation January 2013 (Source: European Commission 2013e, “Impact Assessment” p. 120)

143. The historical competition between the copper and the cable platforms is the most important cause for Belgium's strong position on the broadband market, says the European Commission: “Belgium is the most advanced in NGA, as close to 60% of fixed broadband lines are at least 30 Mbps download as a result of fierce platform competition between cable and VDSL” (Source: Digital Agenda Scoreboard, p 56).

Read more ...

→ Digital Agenda Scoreboard 2013 – Commission Staff Working Document

13.2 Topic 2: Real versus advertised download speed

144. The findings referred to in topic 1 are based on the advertised speed of the Internet offers, which does not always correspond with the actual speed the consumer gets. Providers can only communicate the maximum speed of the connection. However, the speed mentioned in the contract can only be reached in optimum conditions.
145. A series of factors can have an influence on the connection speed reached by the subscribers in reality. On the one hand, that speed can be influenced by the attenuation of the signal on xDSL networks. This attenuation is caused by the weakening of the signal's strength between the subscriber and the DSL equipment in the exchange, when the signal goes through the copper pair. Therefore, the speed depends on the distance between the subscriber and the DSL equipment. On the other hand the attainable speed can vary in the course of time because of overload. This has to do with the effect of the shared use of the same bandwidth by various subscribers on the ISPs' networks. The attainable speed can also be impacted by traffic management and the ISPs' network capacity. Consequently differences in performance may occur between various platforms and between ISPs who are active on the same platform (Source: BIPT, 2012, speed of the fixed broadband connection).
146. Also factors external to the ISP networks may affect the connection speed that is attainable for subscribers. Examples are the quality of the home network, the subscriber's computer, the server where the requests are sent to, the quality of the subscriber's wireless network and the simultaneous shared use of the connection by the various terminal devices and/or applications. ISPs have no direct control over these factors.
147. The European Commission has had the deviation between the advertised and the actual speed examined by monitoring 9,104 households across Europe by means of a *whitebox* (hardware installation). The monitoring was carried out in March 2012. The research showed that there are big differences between the technologies and also between countries.
148. The figures below present the actual download speed (during peak hours) as a percentage of the speed advertised. The actual download speed of cable services is usually close to the speed advertised. With its 89.9% ratio compared to a 91.9% average Belgium is no exception. The market share of cable in France is too insignificant to be included in this study.

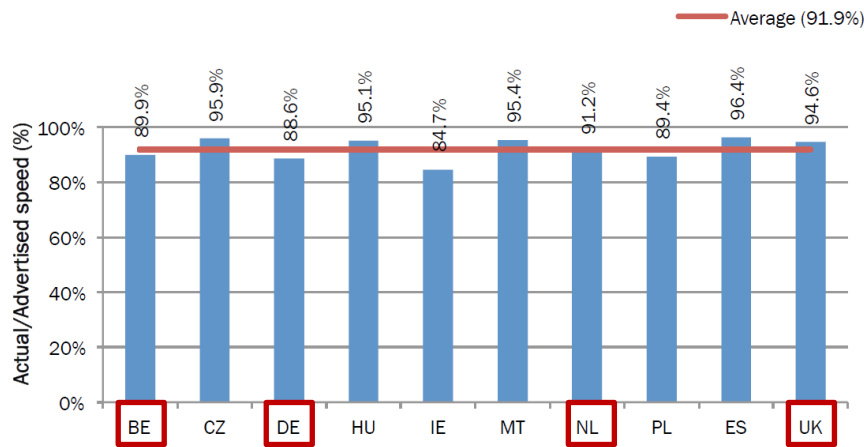


Figure 79: Actual download speed of cable technology as a percentage of advertised speed during peak periods, from 7 p.m. to 11 p.m. (Source: European Commission, 2013f, "Quality of Broadband Services in the EU").

149. Within the comparison group of FTTX (including VDSL2) the 'actual versus advertised speed' deviation is bigger (on average 81.2%).

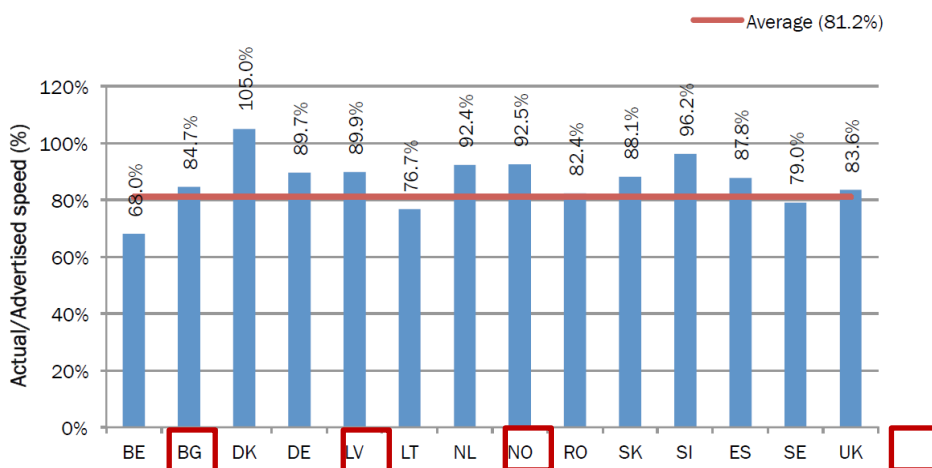


Figure 80: Actual download speed of FTTX technology as a percentage of advertised speed during peak periods, from 7 p.m. to 11 p.m. (Source: idem).

150. With its 68% ratio Belgium seems to be lagging behind the relevant neighbouring countries. However, this can partly be explained by the methodology that is used in the study:

- VDSL2 was categorized as 'FTTx', together with FTTH. As the speed of VDSL2 is depending on the distance, and the speed for FTTH is not, the FTTH-speed is closer to the promised speed.
- In the study, no distinction was made between ADSL, ADSL2+ and VDSL2. As a consequences, the measured speed is a mixture of three technologies. Hence, the result of the measured speed is lower, compared to the result of the measured speed of VDSL2 only.
- No measures were taken on a traffic free moment, hence there is an impact of digital TV on the measured speed of VDSL2.

151. In order to give the consumer more transparency about the speed of his broadband connection, the BIPT took a decision on 4 December 2012²⁷ that obliges the operators to provide the following consumer-specific information in each contract between a client and the operator:

- The upload- and download speed of the connection, during off-peak hours²⁸;
- The minimum speed of the connection for uploading and downloading during peak-hours;
- The maximum speed of the connection for uploading and downloading during peak-hours;
- The volume for downloading, defined in the contract;

152. This obligation has been operational since July 1, 2013.

153. The study also showed that the actual speed of any technology diminished by two to three per cent during peak hours. This uniformity shows that all technologies are equally susceptible to congestion during peak hours.

Read more ...

→ [European Commission, Quality of Broadband Services in the EU \(in March 2012\)](#)

²⁷ Decision of the Counsel of the BIPT of December 4, 2012 concerning the communication of the speed of broadband connections.

²⁸ Peak hours are - within Europe - most commonly defined as the period between 7PM and 11PM.

13.3 Topic 3: Internet speed and applications

154. A polling of 27,786 Europeans - commissioned by the European Commission - shows that 57% of the respondents are not aware of the contractual (maximum) download speed of their Internet connections. Of the Belgian respondents no less than 75% appears to be unaware of their contractual Internet speed.
155. In addition only a quarter of the people who do know their maximum download speed reported that their actual speed did not correspond with the contractual speed (see above).
156. Broadband connections become increasingly faster, but consumers seem to be little informed about which download speed meets their needs best. This summary makes it possible to get an idea about the needs in terms of volume and speed for various applications.

Using the web	Theoretical download speed			
	2 Mbps	8 Mbps	24 Mbps	50 Mbps
Downloading a web page from a site (250 kB)	1 second	0.3 seconds	0.1 second	< 0.1 second
Downloading a song (5 MB)	21 seconds	5 seconds	2 seconds	1 second
Downloading a music video (25 MB)	1 minute 45 seconds	26 seconds	9 seconds	4 seconds
Downloading a low-quality movie (750 MB)	52 minutes	13 minutes 6 seconds	4 minutes 22 seconds	2 minutes
Downloading a DVD-quality movie (4 GB)	4 hours 48 minutes	1 hour 11 minutes	24 minutes	11 minutes

Figure 83: How long does it take in theory to download at a specific Internet speed? (Source: BIPT website).

157. The speed that is required also depends on the number of family members who are simultaneously active on the Internet on several devices that are connected to the network.
158. Fluent *streaming* of films and *online gaming* require a stable basic speed. Streaming service Netflix recommends a minimum speed of 6 Mbps to stream films with a sufficient level of quality. Online *gaming* requires the same speed.

Read more ...

- BIPT website: FAQ "What speed and what volume do I need?"
- European Commission, EU-Household Survey, 2013

13.4 Topic 4: Mobile Broadband (coverage and penetration)

159. At the end of 2012 an average of 96.3% of the European territory had HSPA (3G) network coverage. LTE (4G) network coverage, mainly available in urban areas, tripled in 2012. At the end of 2012 LTE was available to 26.2% of the European population. Here too, Germany is doing better than average with an availability of more than 50%, whereas France and Belgium only reached 10% at the time. The United Kingdom also scored below the EU average. At the end of 2012 LTE had not been rolled out yet in the Netherlands.

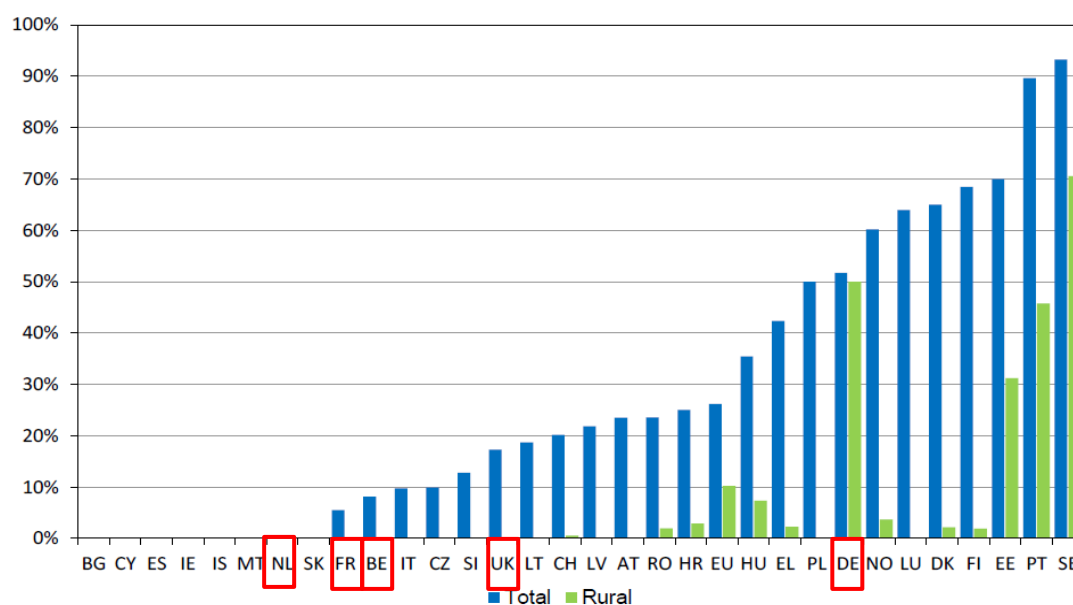


Figure 84: LTE network coverage per country expressed in percentage of the population - situation at the end of 2012 (Source: European Commission 2013c, Digital Agenda Scoreboard 2013).

160. In the course of 2013 roll-out of 4G networks increased in most European countries because of the recent auctioning of the 800 MHz band.
161. Average mobile broadband penetration in EU countries reached 54.5% in January 2013 (both smartphone and tablet/dongle). Mobile Internet is most popular in the Scandinavian countries, where penetration is around 100%. The United Kingdom also has many mobile data users. Despite good HSPA network coverage (99%) in Belgium, mobile broadband penetration is only 33%. All other neighbouring countries of Belgium have more mobile data users. In July 2011 penetration was barely 16% in Belgium, which shows that in the past year there was a significant growth of mobile data use.

Mobile Broadband penetration - all active users, January 2013

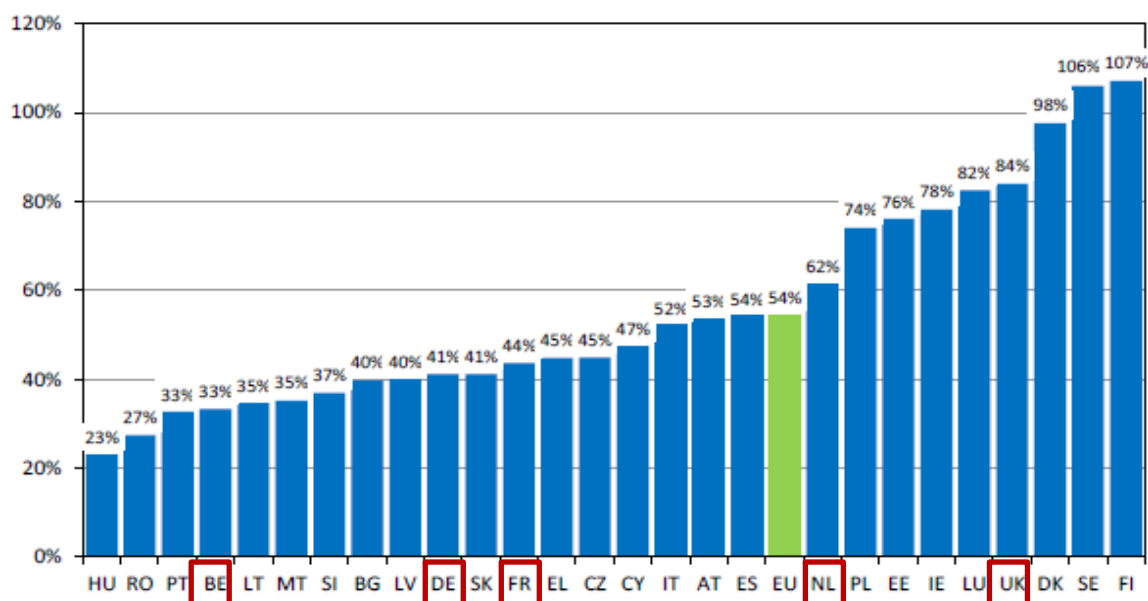


Figure 85: Mobile broadband penetration, all users (smartphone + tablets + dongles), situation January 2013 (Source: European Commission, 2013c, Digital Agenda Scoreboard 2013)

162. Measured for all OECD countries at the end of 2012, 57% of the inhabitants had a mobile broadband subscription. In 2009 this was only 30%. The average growth ratio of mobile broadband across all OECD countries was about 29% in 2011. In some countries, such as the Czech Republic (325%), Spain (136%) and Turkey (343%) the growth ratio exceeded 100% (Source: OECD Communications Outlook 2013, p. 101).
163. Because tablets usually use a larger data volume, the OECD expects that consumers will be quicker to adopt the 4G technology. 3G uptake lasted several years, mainly because people did not see any concrete applications yet for using mobile Internet.

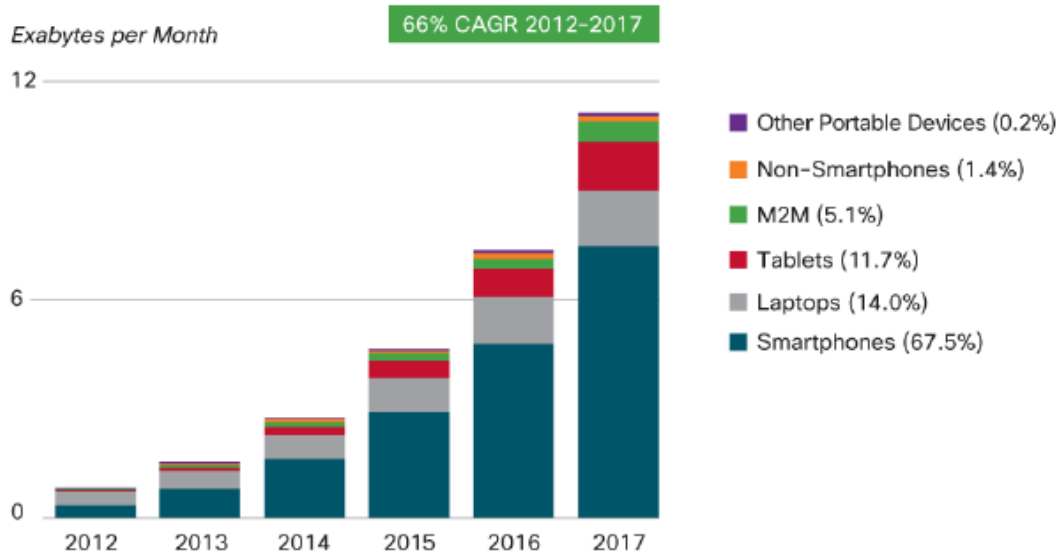
Read more ...

- Digital Agenda Scoreboard 2013 – Commission Staff Working Document
- OECD Communications Outlook 2013

13.5 Topic 5: Mobile Internet (data use)

164. The postpaid tariff plans selected for the comparison show big differences in data volume from one country to another. The Belgian mobile data tariff plans have a volume limitation between 500 MB and 5 GB. The tariff plans selected in France, the United Kingdom and especially Germany usually have higher *data caps* (about 5 GB on average). For consumers with a lower volume consumption we notice the more extensive Dutch offer of tariff plans with a low *data cap* from 50 MB to 10 GB.
165. An OECD study has shown that an average *data cap* - on a sample of selected tariff mobile broadband plans in all OECD countries - amounted to 8.6 GB in 2012. The maximum data cap was lowest in Belgium and New Zealand and amounted to 4 GB (Source: OECD Communications Outlook 2013, p. 115).
166. If the user reaches his data cap he either has to pay extra (a certain amount per MB) or his download speed is strongly reduced (to 64 Kbps for instance), thus changing the users experience.
167. A tariff plan that includes a smaller data volume does not automatically imply that a mobile surfer is limited in his surfing behaviour. Indeed, operators also offer Wi-Fi networks. Surfing by way of a Wi-Fi network is cheaper than mobile Internet, but the range is limited to a building or a quarter. Access to a Wi-Fi network can be private or public. Private Wi-Fi networks are found with Internet customers at home, hotspots (Internet over Wi-Fi access points), in public places such as train stations, sports stadiums, camping sites, airports etc. Some operators have extensive coverage through hotspots (nationwide); other operators have a more limited number of hotspots (e.g. in cities). Some studies say that today already 80% of data used on mobile devices is received through Wi-Fi connections on fixed networks (Source: OECD Communications Outlook, p. 38).
168. Consultancy firm Van Dijk pointed out in its study on broadband prices that operators are increasingly offering access to a network of hotspots. This means of mobile Internet comes as a free service with a fixed broadband subscription. Examples can be found in Belgium (Belgacom and Telenet), the Netherlands (KPN), France (SFR and Free), the United Kingdom (BT) and also in Poland and Slovenia. In addition Belgacom also offers access to the mobile 3G network as part of a fixed broadband subscription.
169. The importance of those Wi-Fi networks will keep on growing: mobile data traffic is expected to explode in the years to come because users of smartphones, tablets, laptops and other mobile equipment are watching video more and more over wireless Internet (Wi-Fi networks + mobile broadband over 3G or 4G). The popularity of smartphones and tablets stimulates demand for faster and more mobile Internet; operators respond to this trend by rolling out 4G networks.
170. Cisco calculated that the average data use of smartphones rose from 189 MB in 2011 to 342 MB (per month) in 2012. Data use on tablets soared from 416 MB to 812 MB on

average. Cisco forecasts that this spectacular growth will go on in the coming years (Cisco's Visual Networking Index). The figure below illustrates that smartphones are expected to account for about 68% of all mobile data traffic in 2017. Better image quality and bigger screens make video streaming more accessible, which proportionally uses a lot of data.



Figures in legend refer to traffic share in 2017.

Figure 86: Global mobile data traffic forecast, expressed in EB a month (Source: Cisco, "Visual Networking Index").

Read more ...

- Cisco, Visual Networking Index, 2013
- OECD, Communications Outlook 2013

13.6 Topic 6: Bundle penetration

171. A survey held among 27,786 respondents - commissioned by the European Commission - shows that in Q1 2013 a little over 45% of European households has a bundle²⁹ of various electronic communications services from at least one provider. Bundles are also becoming more and more popular. Purchasing a bundle is most common in the EU15 countries, including the five countries discussed in this price study.

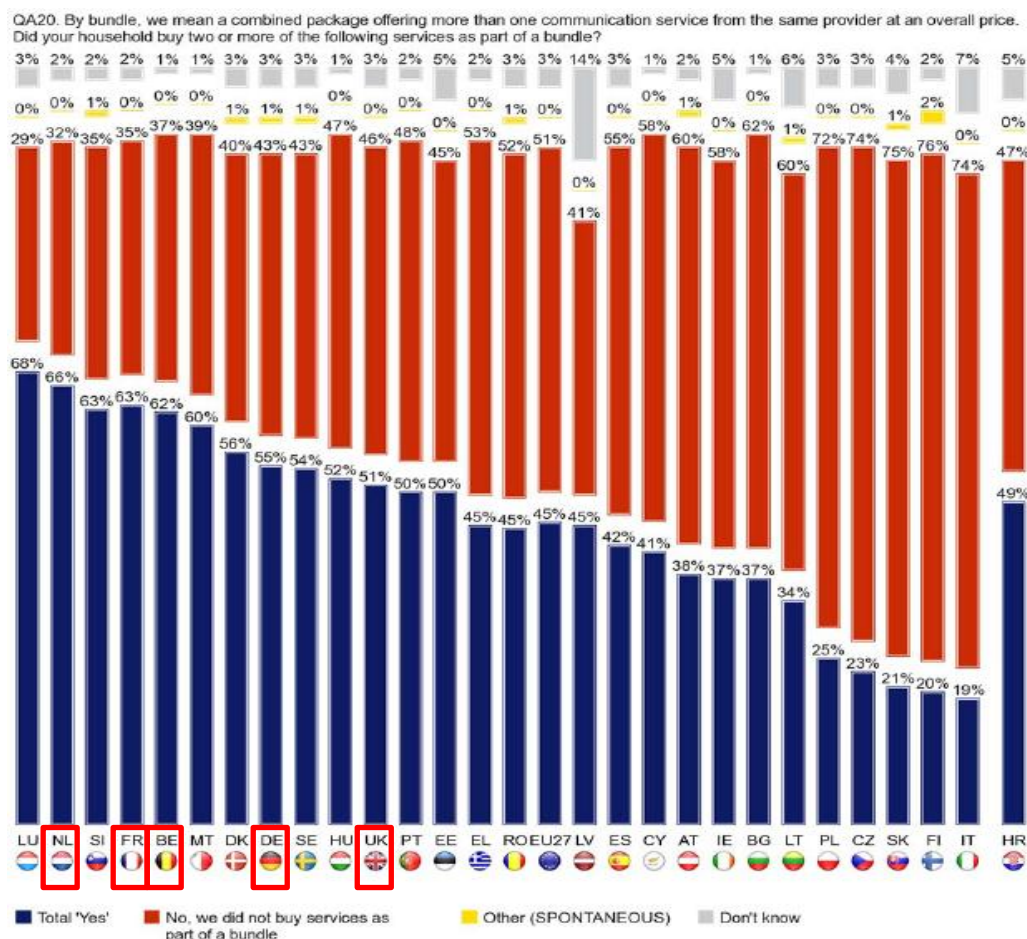


Figure 87: Did your household buy two or more of the following services as part of a bundle? (Source: European Commission, 2013d, E-Communications Household Survey, p. 48).

172. In Belgium and its four neighbouring countries the number of households purchasing a bundle is above the EU28 average: no less than 62% of the Belgian respondents has a bundle.

173. As commissioned by the European Commission, Consultancy firm Van Dijk makes an annual inventory of the monthly cost of broadband offers in 38 countries. It points out that in almost all countries in the study, the availability of bundles is increasing. Certain operators, in Germany and Spain for instance, offer no stand-alone products anymore and focus fully on selling bundles. In Sweden operators stimulate their customers to buy a

²⁹ An electronic communications services bundle is defined as a combination of at least two communications services from the same provider, at an overall price.

bundle by pricing them more cheaply than stand-alone broadband Internet. In general it was observed in the study that a bundle consisting of three services is more expensive than a two-play bundle, which in turn is more expensive than a stand-alone offer. Parallel to the trend of bundling telecom services, in 2012 an increasing number of operators was seen to also offer mobile services (telephony and/or broadband) in combination with broadband Internet.

174. The trend towards bundles is confirmed by BIPT data based on input from the operators: at the end of 2012, 57% of Belgian households purchased several telecom services from the same provider as opposed to 49% in 2011. A growing number of bundles is triple play. Their share in the total number of residential subscribers having a bundle amounts to 58%.

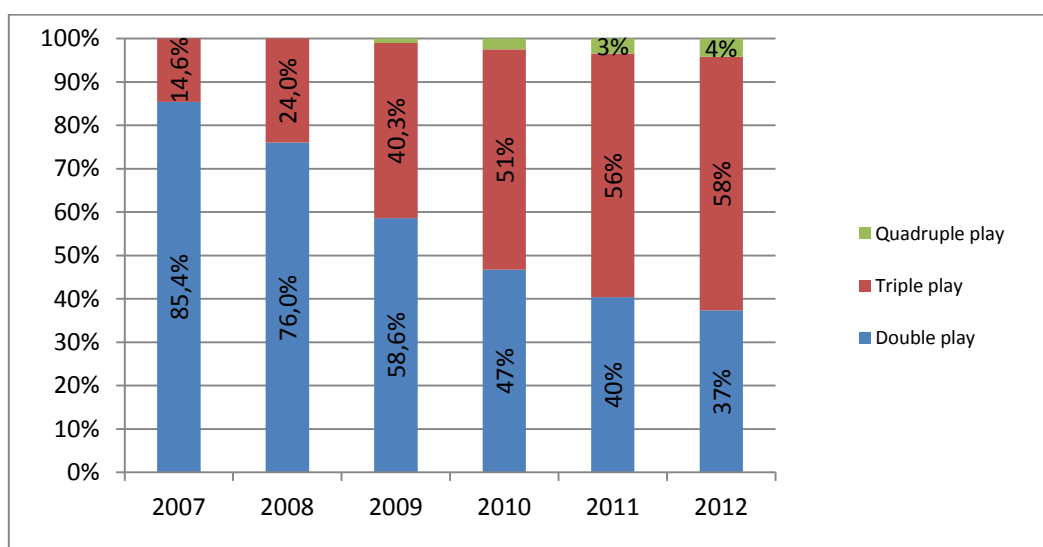


Figure 88: Evolution of the number of residential subscribers in Belgium per type of bundle, end of 2012 (Source: BIPT, Situation of the electronic communications sector 2012, p. 34).

175. Telecommunications services are most often combined with broadband access. In Belgium in 2012 no less than 79% of residential broadband subscribers bought fixed broadband access as part of a bundle.
176. On the one hand bundling telecom products often gives a financial advantage to the customer as opposed to buying the products separately. On the other hand consumers having a bundle are less inclined to switch to another provider. In fact the consumer is afraid that it would be too complicated to migrate all products to a new provider smoothly.

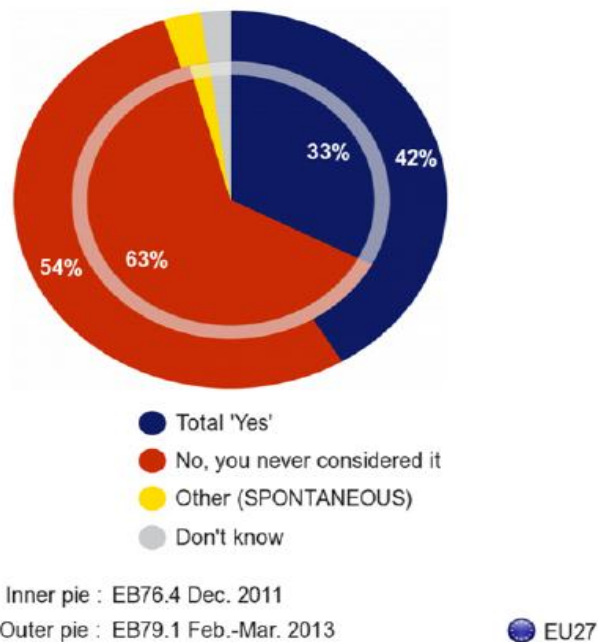
Read more ...

- BIPT, Situation of the electronic communications sector 2012
- European Commission, EU-Household Survey, 2013

13.7 Topic 7: Switching operators and comparing tariff plans

177. A survey commissioned by the European Commission has shown that a majority of European households (54%) had not yet considered switching to another bundle operator. 59% of the Belgian respondents indicated they had never considered a migration.

QA22. Have you or someone in your household ever considered changing your bundle provider?



Base: All respondents with a bundle at home in EU 27 (n = 12181)

Figure 89: Have you or someone in your household ever considered changing your bundle provider? (Source: European Commission, 2013d, E-Communications Household Survey, p. 106).

178. This reserve to change has several causes according to the study:

- 14% of European households reports to be satisfied with their current provider. In Belgium that number is even higher: 22% of the Belgian respondents indicated they did not want to change providers because they are satisfied with their current offer.
- 7% says it is too much trouble to change operators. This reason is most often given in the Netherlands (13%).
- Other reasons mentioned by respondents is that they had no equivalent alternative (6%) or that their own provider made a better offer, as a result of which the customer decided not to switch (6%).

179. Few families actively switch operators, the European Commission concluded. The EU survey showed that Belgian consumers are the most inert³⁰ consumers of the entire EU28. This means that they are least inclined to switch to another operator. After the Belgians, the Czech, French and Lithuanians are most inert. The Swedish respondents showed the highest inclination to switch operators and are therefore the least inert.
180. BIPT has recently published a study carried out by the Université Catholique de Louvain (UCL), in which the situation of the Belgian electronic communications market was analysed from the consumer perspective. The study was based on an enquiry held among 1,422 respondents spread over Belgium. The enquiry took place in March 2013 and probed a number of factors relating to electronic communications. The enquiry learned that mainly economic criteria are a determinant factor when choosing a new tariff plan. However a striking element is that a majority of respondents (59%) has not compared the offers of various operators before deciding on a subscription to a telecommunications service.
181. Almost one third of the persons said to have changed operators in the course of the last three years. People who had not switched operators, were simply satisfied with their current operator (51%). One fifth of the respondents also indicated that it seemed too complicated.
182. Consumers find it very hard to compare prices and services. The enquiry showed that consumers apparently do not use the cheapest offer on the market; in general they are not sure about it.

³⁰ The respondents selected the following answers to the question whether they were prepared to switch operators: 'No, I have never considered it', 'Yes, but it takes too much effort', 'Yes, but I am satisfied with my current offer', 'Yes, but I thought it was not possible to change providers'.

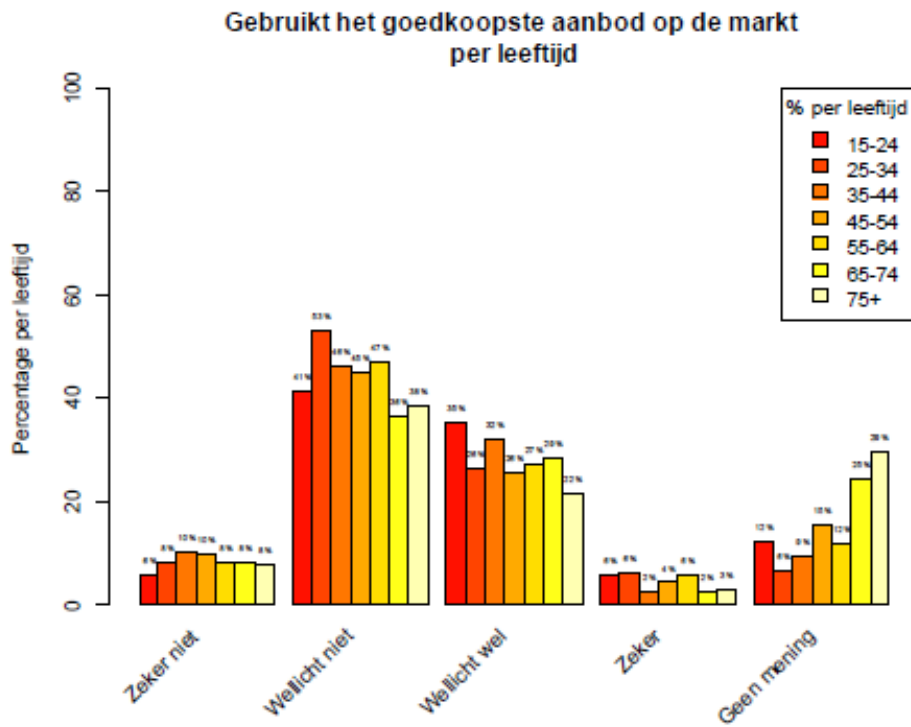


Figure 90: Do you use the cheapest offer on the market, per age (Source: BIPT, Enquiry, p. 88).

183. Young people think more often that they are not using the cheapest offer on the market. People over 65 are not sure about their answer.
184. As a result of the consumers' inert behaviour a large part of the customers is still using 'old' tariff plans³¹, which are often more expensive than the current tariff plans available. Data coming from the sector, requested by BIPT, show that this summer about 42% of all mobile customers still have an 'old' subscription. The number of dormant customers having a prepaid card was higher and even exceeds 50%.

Read more ...

- European Commission, EU-Household Survey, 2013
- BIPT, Inquiry about the users' perception of the Belgian electronic communications market, 2013

³¹ An 'old' tariff plan is understood to mean a tariff plan no longer marketed by an operator.

13.8 Summary of quality aspects

Topic 1: broadband Internet (coverage and penetration)

185. At the end of 2012 basic Internet access was available for almost all European households (95%). However, broadband access with a minimum download speed of 30 Mbps is not available yet but for little more than half the European households, because the NGA networks offering this possibility are mainly rolled out in urban areas.
186. With a 95% availability the Netherlands and Belgium are among the top three in the European ranking. In France NGA networks have hardly been rolled out yet. When considering the real purchase of superfast Internet, Belgium and the Netherlands score significantly better than the EU average, as do the other three neighbouring countries.
187. As a consequence the quality of the offer - in terms of available download speed - varies a lot from one country to another. Regional differences can also be considerable, even within the geographical territory analysed in this price study.

Topic 2: Actual versus advertised download speed

188. In general consumers have an 'actual' download speed that is lower than the maximum speed 'advertised'. How big that difference is, depends on the technology and varies from country to country. A European Commission analysis shows that the average difference between the actual and advertised speed is bigger with FTTx (including VDSL2) than with cable. The study also showed that the actual speed of any technology dropped by two to three per cent during peak hours.

Topic 3: Internet speed and applications

189. Broadband connections become increasingly faster, but consumers seem to be little informed about which download speed meets their needs.

Topic 4: Mobile Broadband (coverage and penetration)

190. Despite the Belgian 3G network's general coverage mobile Internet penetration is remarkably low compared to the rest of Europe.

Topic 5: Mobile broadband (data use)

191. Apart from mobile Internet over 3G or 4G networks operators are increasingly offering Wi-Fi networks or hotspots. Some studies say that today already 80% of data used on mobile devices is received through Wi-Fi connections on fixed networks. The importance of those Wi-Fi networks will keep on growing: mobile data traffic is expected to explode in the years to come because users of smartphones, tablets, laptops and other mobile equipment are watching video more and more over wireless Internet.

Topic 6: Bundle penetration

192. Buying various electronic communications services from at least one provider (bundles) is becoming more and more popular. Our own data show that at the end of 2012, 57% of Belgian households purchased several telecom services from the same provider, as opposed to 49% a year before. On the one hand bundling telecom products often gives a financial advantage to the customer as opposed to buying the products separately. On the other hand consumers having a bundle are less inclined to switch to another provider. In fact the consumer is afraid that it would be too complicated to migrate all products to a new provider smoothly.

Topic 7: Switching operators and comparing tariff plans

193. Belgian households are least inclined to switch operators compared to other European households. The main reason for Belgian consumers not to change providers is that they are satisfied with their current offer (51%). Consumers find it very hard to compare prices and services. The enquiry showed that consumers are apparently not sure whether they have the cheapest offer on the market.

ANNEX A STUDY OF REFERENCES

A.1 OBJECTIVE

194. In this section some other price studies are discussed. Apart from renowned EC and OECD studies certain consulting agencies also regularly perform benchmarks to analyse the price level of telecom products in a sample of countries. Price analyses are also made by newspapers and periodicals, such as Test-Aankoop.
195. Although the price studies available by and large apply the same method to compare telecom prices, all studies are different as to their purpose. As a consequence the studies' results may be different from one another. Several elements have an impact on monitoring and comparing the price level of telecom products, and therefore produce a different classification of the results:
- the period in which the tariffs have been collected;
 - the sample of operators selected;
 - the sample of tariff plans selected;
 - the user profile used to compare tariff plans;
 - the (once-only and/or recurrent) costs taken into account.
196. Although each study in itself represents a certain trend, it is impossible to give a comprehensive and indisputable picture of the price level across countries. It is therefore important to interpret the results with some caution. For lack of an absolute basis of comparison a price study can only give a general picture of the price difference between countries.
197. This annex aims to give some information about a number of recent studies relating to the price level of telecom products in Belgium, compared to other EU countries.

A.2 SURVEY OF PRICES BASED ON SEVERAL STUDIES

A.2.1 Mobile telephony

198. In the previous international price study it was stated that tariffs for mobile calls have decreased significantly since the autumn of 2012. Test-Aankoop comes to the same conclusion: since its previous tariff comparison a decrease in price is noticeable. Moreover, according to Test-Aankoop, the gap between the tariffs of mobile telephony in Belgium and its neighbouring countries has narrowed in comparison with its 2009 study. It is remarkable that in Belgium the three main network operators (Proximus, Mobistar and Base) are cheapest for various profiles, whereas abroad the smaller (virtual) operators are the price-cutters.
199. Test-Aankoop says that the United Kingdom, France and Italy are even remarkably cheaper. In Germany, the Netherlands and Spain the price level is higher, except for certain alternative operators (MVNOs). For a bundle that includes two hours of calling, 150 text messages and 500 MB of data only Germany is more expensive than Belgium (tariffs between 1 April and 1 May 2013).

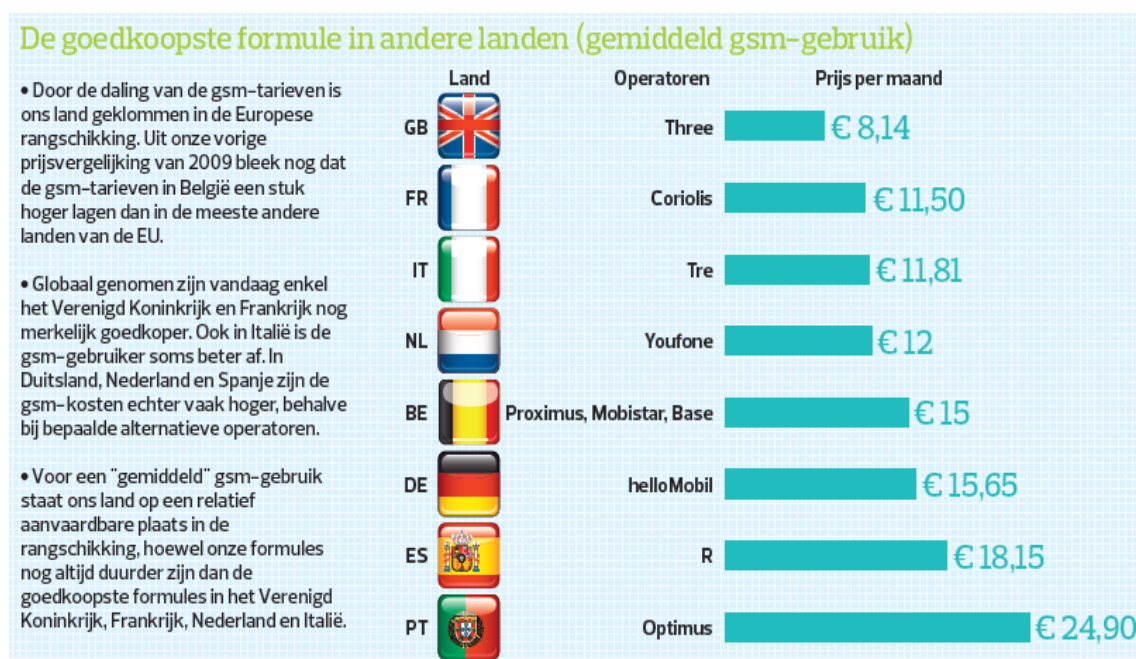


Figure A.1: The cheapest tariff plan for ± 120 call minutes, 150 text messages and 500 MB of data (Source: Test-Aankoop, 2013).

200. A study performed by consulting agency Rewheel reveals that in Europe the average price level of mobile telephony can vary enormously from one country to another, more specifically as regards smartphone use³². According to that study in countries such as Finland and Denmark customers pay up to fourteen times less for 1 GB of mobile data than in the Netherlands, which is the most expensive country within the EU27 for mobile data use.

³² Calling and text messages, including mobile data use. The tariffs used in the study were collected between 27/03/2013 and 21/05/2013.

201. Rewheel also points out that prices of small telecom operators who are active in only one or two countries are up to ten times lower than the tariff plans of big international operators, such as Vodafone, France Télécom, Telefónica, Deutsche Telekom or KPN (the so-called 'E5'), including their subsidiaries. Countries where besides the incumbent only E5 operators are present, are described by Rewheel as *protected markets*. Countries where independent challengers are present, are described as *progressive markets*.
202. In the figure below we see a user profile, in which at least 200 call minutes, 20 text messages and 2 GB mobile data are included. Immediately it is striking that the price for this call bundle varies from € 7 in Estonia to € 45 in Malta and Greece. In Belgium this call bundle would cost about € 28. That is less than in the Netherlands and Germany. The price level of this bundle is lower in France and the United Kingdom, described by Rewheel as 'progressive' countries because mobile network operators are present here, who are no E5 subsidiaries. When only the Belgian ranking among its four neighbouring countries is considered, the same trend is pictured as BIPT's own findings in chapter 4. France and the United Kingdom are cheaper for mobile calling; the Netherlands and Germany are more expensive.

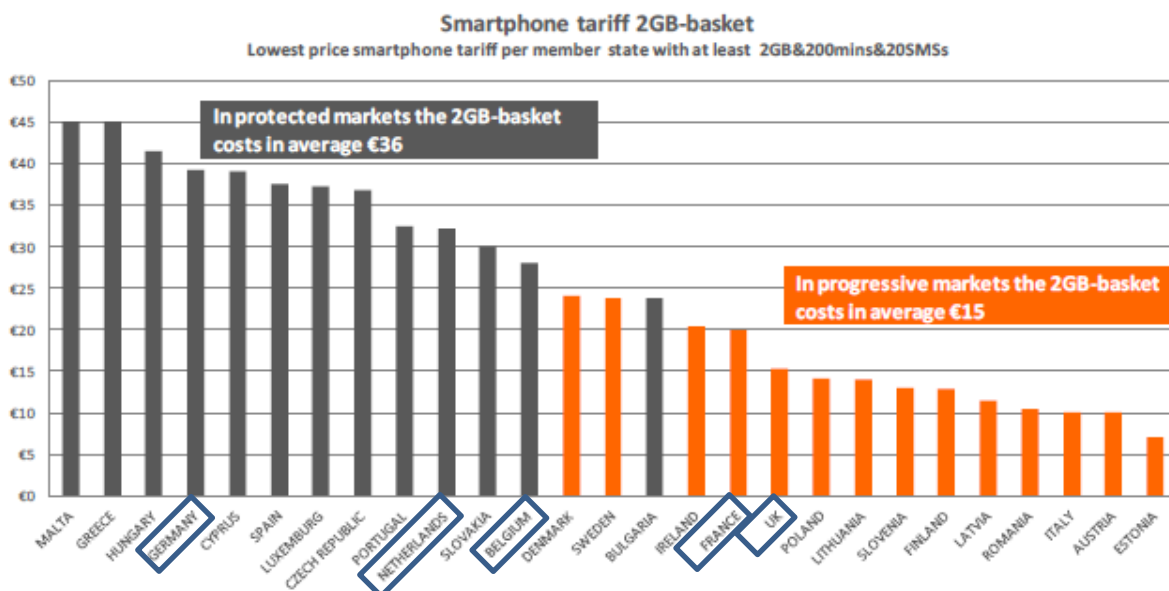


Figure A.2: User profile with at least 200 call minutes, 20 text messages and 2 GB of data (Source: Rewheel, 2013).

More price studies on mobile calling?

- OECD – OECD Communications Outlook 2013
- Rewheel - EU27 mobile data cost competitiveness report – May 2013
- Test-Aankoop - GSM-tarieven : betaal minder ! (2013)

A.2.2 Mobile Internet for tablet users

203. When the tariffs of *stand-alone* mobile data for tablet or PC users are considered, the same trend is observed: the Netherlands, Belgium and Germany are remarkably more expensive for mobile surfing than France and the United Kingdom. In the figure below the cheapest tariff plan per country allowing a minimum use of 5 GB was selected.

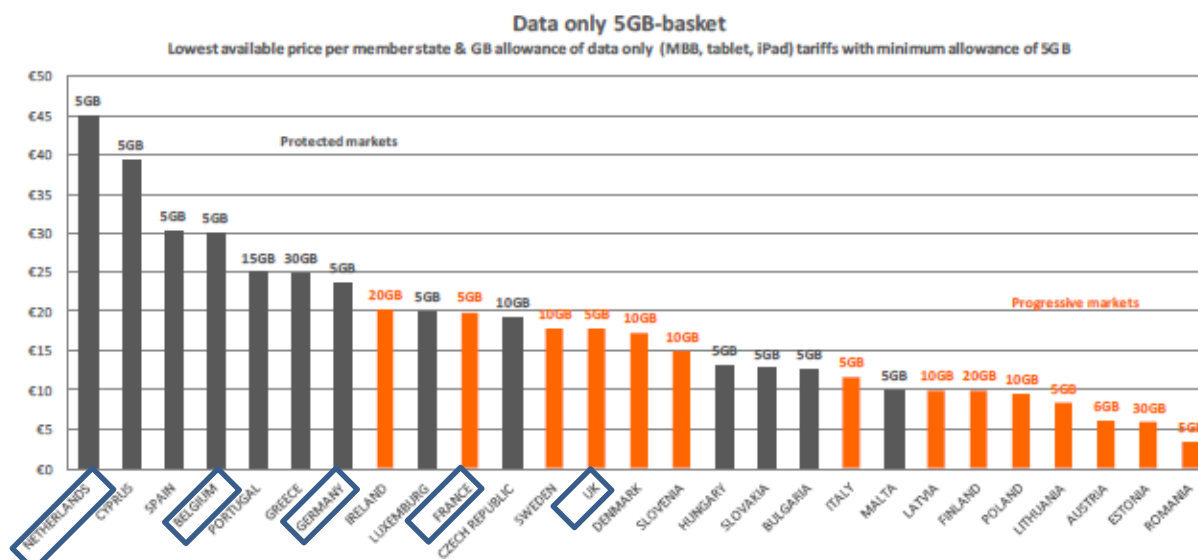


Figure A.3: The cheapest tariff plan with at least 5 GB of mobile data (Source: Rewheel).

More price studies on mobile Internet for tablet users?

→ OECD – OECD Communications Outlook 2013

→ Rewheel - EU27 mobile data cost competitiveness report – May 2013

A.2.3 Broadband Internet and bundles

Broadband Internet (stand-alone)

204. The figure below indicates the minimum and maximum prices observed for a broadband subscription in all OECD countries, expressed in USD PPP. Based on those data a broadband subscription in Belgium costs between \$29 and \$72. The minimum price in the other neighbouring countries (except France) is found to be lower, although the difference is not big.
205. The *spread* between the minimum and maximum price varies strongly from one country to another. This figure therefore illustrates the fact that consumers need to choose from a variety of offers - from various operators or not - with various prices.

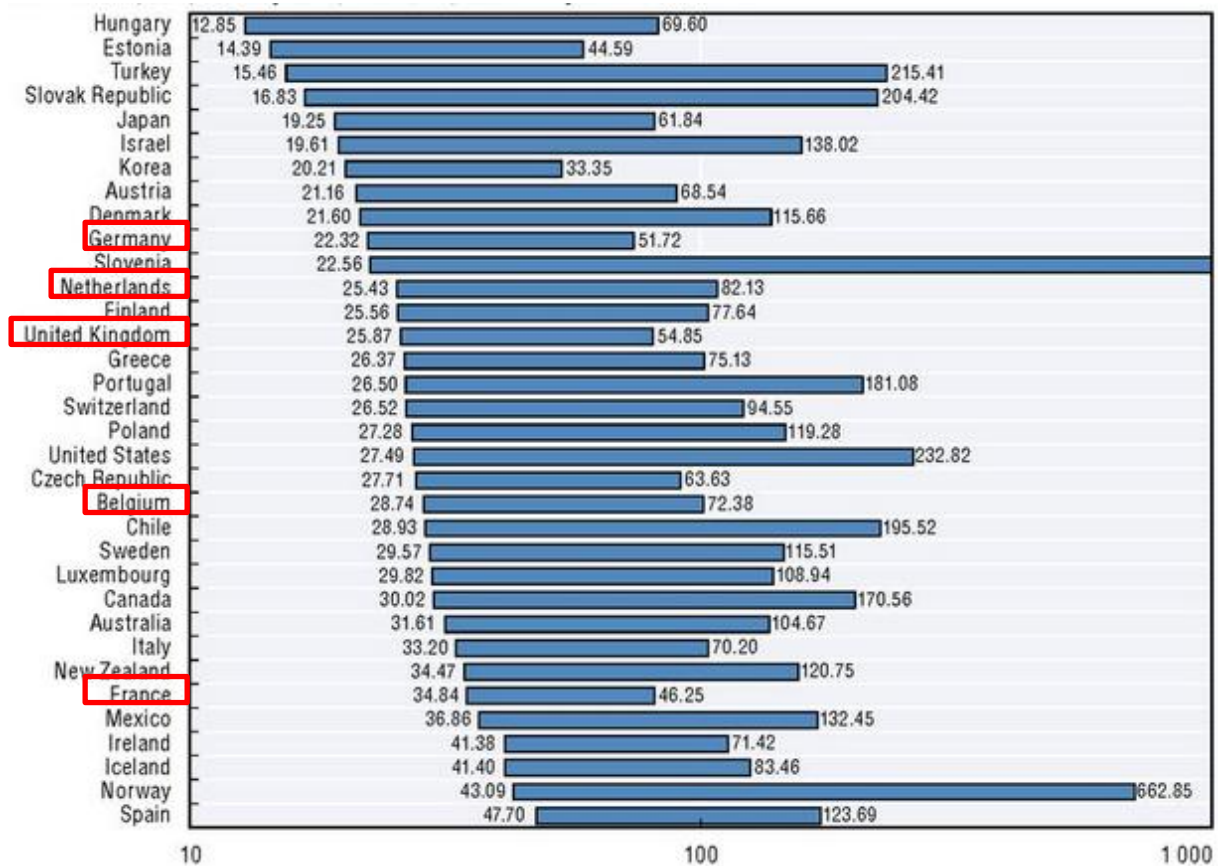


Figure A.4: Broadband subscription price ranges in USD PPP, September 2012 (per country) (Source: OECD, Communications Outlook 2013, p. 217).

206. The figure above does not consider the download speed of broadband offers in a country. As described in topic 2, that speed differs enormously from one country to another. That is why it is logical to compare prices based on the available speed of the subscription.
207. As commissioned by the European Commission consulting agency Van Dijk makes an annual inventory of the monthly cost of broadband offers in 38 countries. In the figure below a view is given of the cheapest tariff plan (blue bar) and the median price observed (green bar) per country for broadband Internet with a speed between 12 Mbps and 30 Mbps (tariffs February 2012). Although the cheapest broadband offer for this category is found in the United Kingdom, the median of all available offers in the United Kingdom is

double that amount. This illustrates that a price-cutter is probably present on the UK market, while the majority of offers are in a higher price range. Based on a ranking according to the median price it can be concluded that for this category only the United Kingdom is more expensive as a neighbouring country than Belgium. This illustrates that low-cost offers exist, but the median price in Belgium equals the median value observed for the EU15 countries.

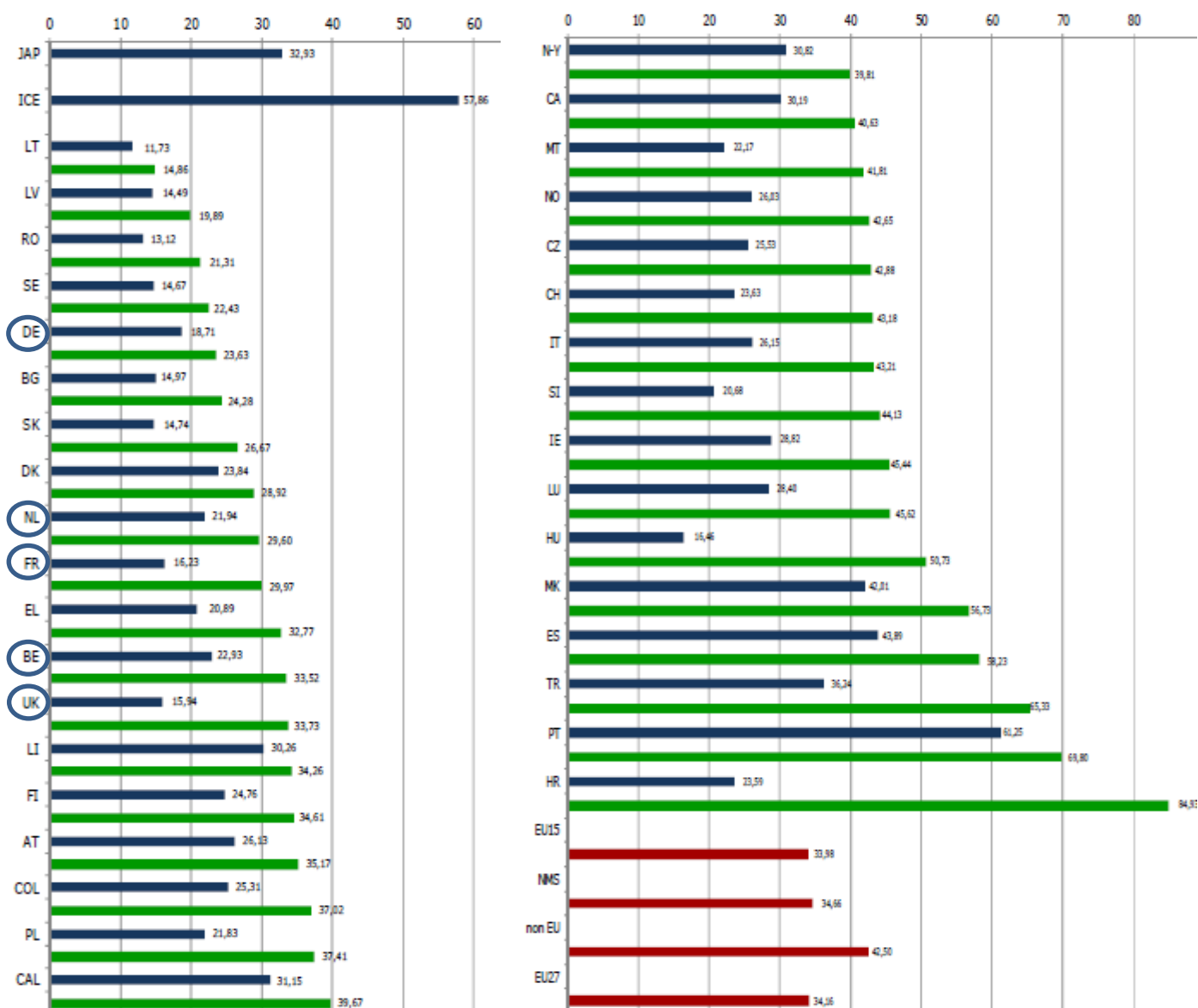


Figure A.5: View of the cheapest tariff plan (blue bar) and the median price observed (green bar) per country for broadband Internet with a speed between 12 Mbps and 30 Mbps. Total cost per month in €/PPP, incl. VAT (Source: Van Dijk, 2012).

Dual play (broadband Internet + digital television)

208. The figure below shows a comparison of the monthly cost for offers combining digital TV and broadband Internet (12 Mbps to 30 Mbps). The median price for the offers in Belgium is € 53.51, which is considerably higher than in our neighbouring countries. When comparing the cheapest price observed with the neighbouring countries, the difference is not as big: in Germany it is € 28.53, in Belgium € 34.86. As to the price the United Kingdom, the Netherlands and France are in the middle.

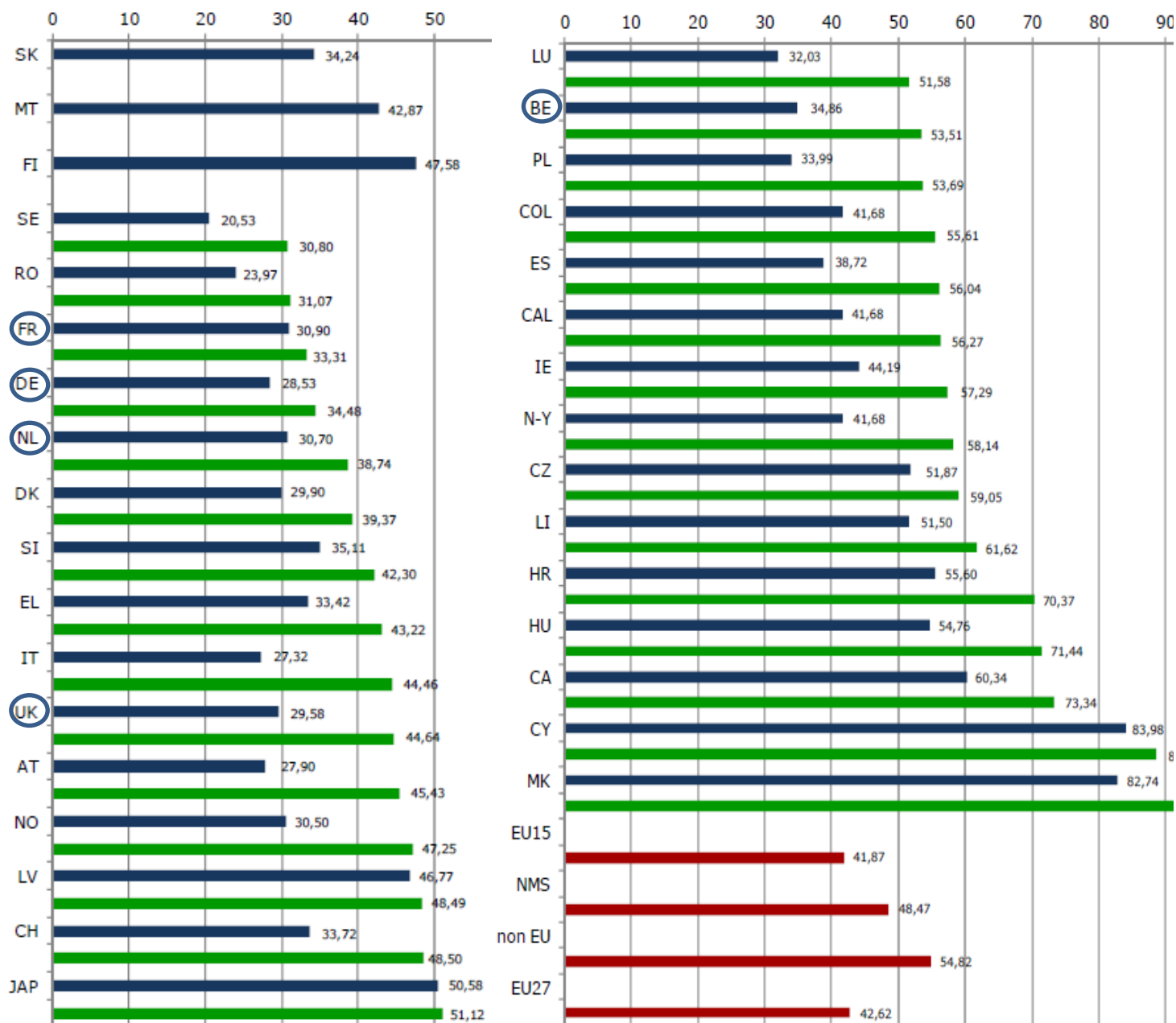


Figure A.6: View of the cheapest tariff plan (blue bar) and the median price observed (green bar) per country for a bundle combining digital TV and broadband Internet with a speed between 12 Mbps and 30 Mbps. Total cost per month in €/PPP, incl. VAT (Source: Van Dijk, 2012).

Triple play (broadband Internet + digital television + fixed telephony)

209. The figure below shows a comparison of the monthly cost for offers bundling fixed telephony, digital TV and broadband Internet (30 Mbps minimum). Belgium is quite a bit more expensive than its neighbouring countries (especially France and Germany) both for the median price and the cheapest tariff plan observed for this bundle. The median value of a triple play in the EU15 is more than € 20 below the median price in Belgium.

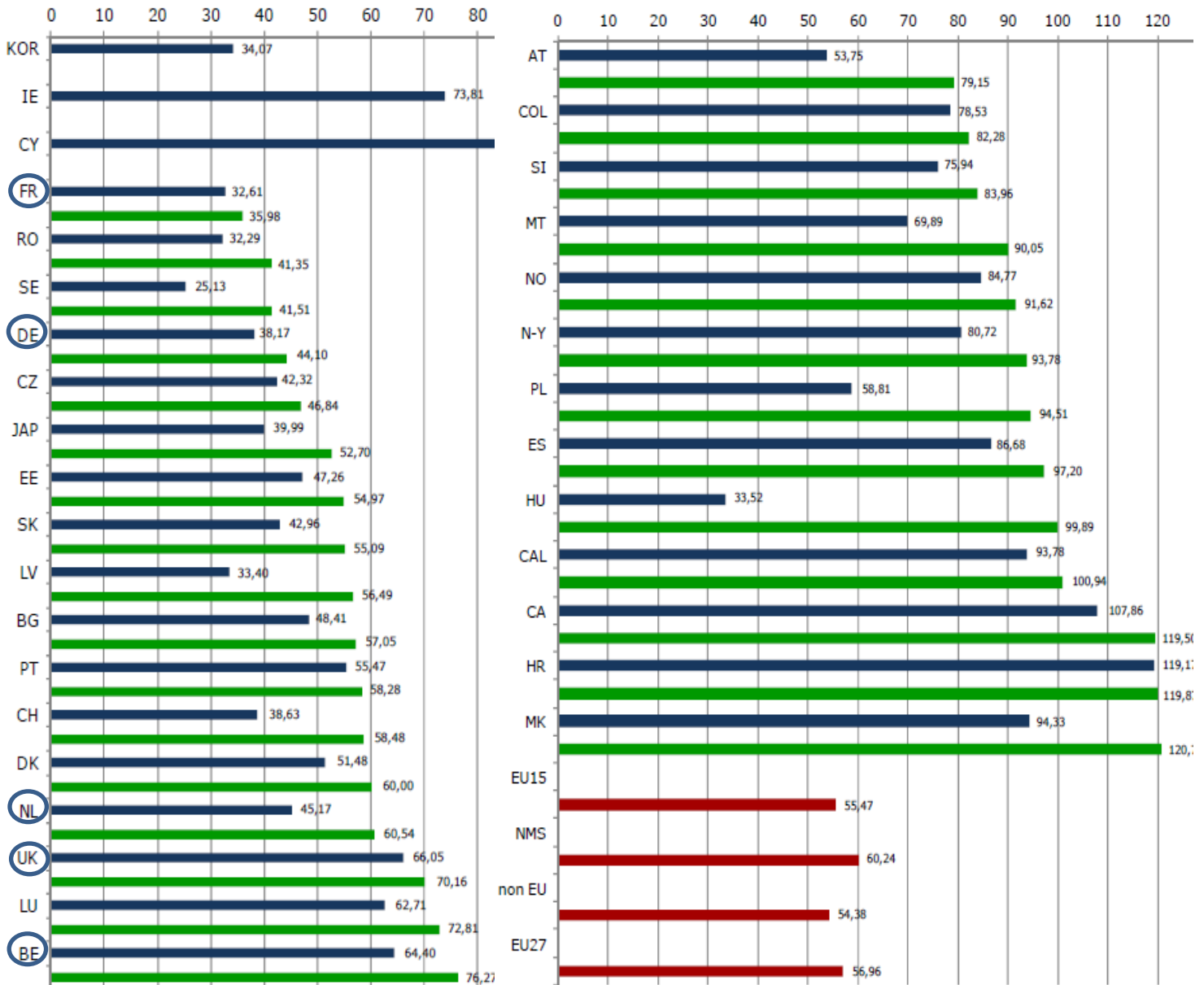


Figure A.7: View of the cheapest tariff plan (blue bar) and the median price observed (green bar) per country for a bundle combining fixed telephony, digital TV and broadband Internet with a speed over 30 Mbps. Total cost per month in €/PPP, incl. VAT (Source: Van Dijk, 2012).

More price studies on broadband Internet and bundles?

- OECD – OECD Communications Outlook 2013
- Van Dijk - Broadband Internet Access Cost, 2012

ANNEX B ABBREVIATIONS

ADSL	Asymmetric Digital Subscriber Line
EC	European Commission
EDGE	Enhanced Data Rates for GSM Evolution
EUR	Euro
FTTx	Fibre to the home/building/cabinet
GB	Gigabyte
HSPA	High Speed Packed Access
Kbit	Kilobyte (expressed per second)
LTE	Long Term Evolution
MB	Megabyte
Mbps	Megabit (expressed per second)
MVNO	Mobile Virtual Network Operator
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
SMS	Short Message Service
USD	US dollar
VAT	Value Added Tax
VDSL	Very-high-bit-rate digital subscriber line

ANNEX C GLOSSARY

ADSL (Asymmetric Digital Subscriber Line)

Variation on xDSL technology, which makes use of high and inaudible frequency ranges with a view to simultaneous transmission of voice and data (see xDSL).

Bandwidth

Indicates the transmission capacity of a transmission link and determines the amount of information (in bits per second) that can be transmitted simultaneously.

Basket

A basket categorises various user profiles (low, medium, high) These profiles have been established on the basis of an average use of telecommunications services, retrieved from the sector. Each basket defines one specific user profile, for fixed telephony, mobile telephony or Internet. Next, the price of that user profile can be calculated.

Broadband

The collective whole of technologies using either the telephone or the coax cable for high-speed data transmission.

Bundle

An electronic communications services bundle is defined as a combination of at least two communications services from the same provider, at an overall price.

Coverage

Percentage of the territory, households, etc. covered by a specific network.

DOCSIS

Group of technologies enabling the transmission of telecommunications signals through coax cables by using very-high-frequency signals. DOCSIS 3.0 is the latest technology.

FTTx

The term FTTx covers among other things FTTH (Fibre to the Home: optical fibre is installed up to the home), FTTB (Fibre to the Building: fibre is installed up to the basement of the building, the *last mile* between the basement and the end-user is still made up of the interior cabling already present) and FTTC (Fibre to the Cabinet: optical fibre is installed up to the street cabinet and the *last mile* between the street cabinet and the end-user is still made up of the copper wire or the coaxial cable already present).

HSPA

A mobile telephony protocol, a data transmission system which makes 3G transmission possible.

Purchasing Power Parity (PPP)

Exchange rate adjusted as to the difference in price level between two countries. It is a means to compare the purchasing power of two countries.

LTE

A mobile telephony protocol, a data transmission system which makes 4G transmission possible. It is the successor of HSPA.

NGA (Next Generation Access)

The current access network where a copper wire runs between the end-user and the exchange (LEX or LDC) will be entirely or partly replaced by optical fibre in the next years.

Contention ratio

The contention ratio is a measure of the maximum demand for bandwidth. The higher the contention ratio, the greater the number of users that are using an Internet connection at the same time, thus causing the download speed per user to drop.

Penetration

The number of persons or households actually buying a service (differs from coverage, which refers to range, because it also includes non-customers).

Retail

Sales to end-consumers, whether private customers or companies.

Take-up

Initial penetration.

VDSL (Very High Rate DSL)

Transmission technology offering very high bit rates but over a shorter range than ADSL (see xDSL).

xDSL (Digital Subscriber Line)

Group of technologies offering high-speed transmission through one or several copper pairs by using very-high-frequency signals. xDSL breaks down into ADSL, SDSL and VDSL. Each of these subgroups has specific applications and special characteristics.

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